

TEMPLE MOUNTAIN AS A SPIRITUAL LIGHT-HOUSE

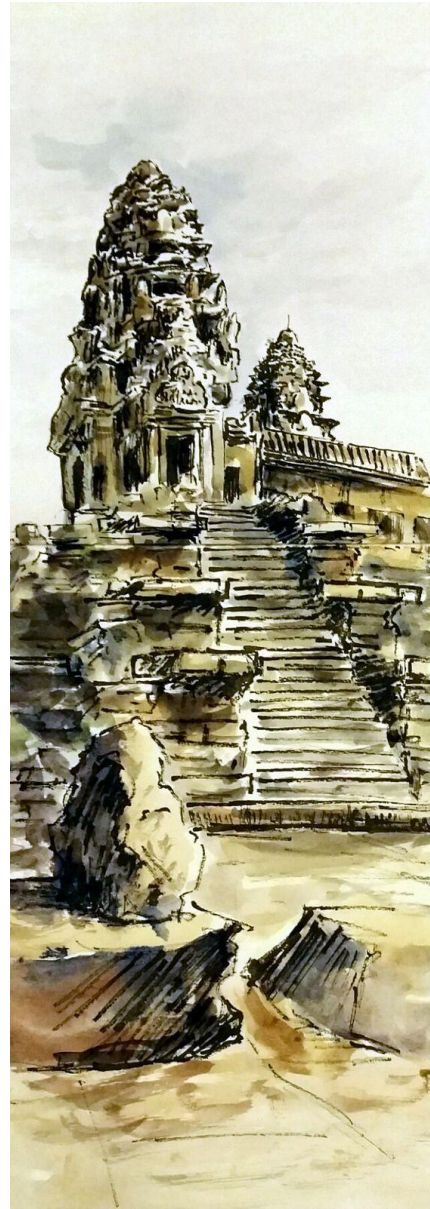
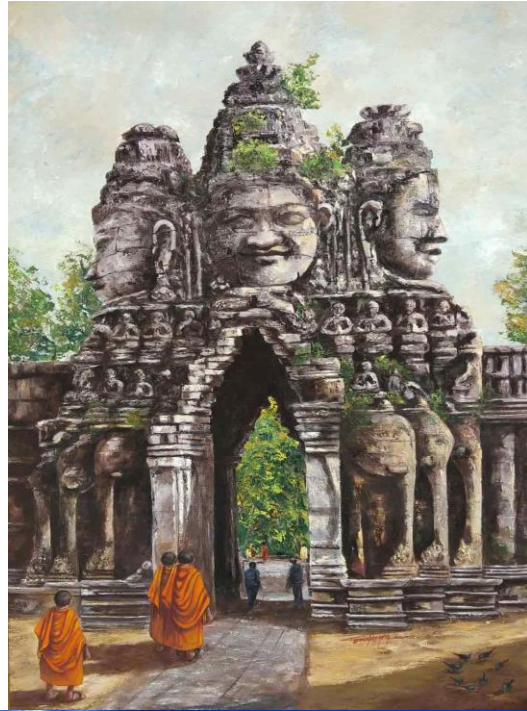
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TEMPLE MOUNTAINS

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F O R E W O R D

The Angkor is called a temple mountain because it is a large temple. Architecturally, it is built as a Pyramid therefore the word Mountain- large at the base and narrow at the top; almost pointed . The Khmer love for the mountains also has to do something with it. Just as the giant ego of the Khmer Kings. Who wanted to build bigger and bigger temples in successive generations to be remembered for “posterity” It is therefore not surprising that the TEMPLES that were built should resemble Mountains and the titles that the Kings took should be on the verge of Blasphemy (In Hinduism). There was no concrete understanding of Hinduism in Cambodia during the Khmer Era and though there was knowledge brought there by Brahmin priests who taught and advised the Kings, a frivolous understanding of Hinduism prompted a makeover to CAMBODIAN HINDUISM that embraced animistic ideas about Mountains and Kings proclaimed themselves as Kings of Hindu Gods. This is proven by the fact that overnight the empire started following Buddhism from Hinduism as if “changing a shirt “.

So I start off with answering the question -Why were temples built? Why do we worship idols and The science of Temple Construction. Then I discuss the first time someone called out a large temple as a MOUNTAIN- the “Angkor Wat .“ The same rules applied to the Temple Mountain of Baphuon

What, if any is the interconnect between the Moungt Kulen and the Structural efficacy of the Khmer designs. Temple Mountains of Cambodia and the Jain Hill temples of India are compared to discern between temples built on mountains and temples that are “mountainous.”

Why no temple mountains in India? Temple-Mountains: The only temple mountain in India is the Masrur Temple – a puzzle standing majestically in the lap of Himalayas- By Authors Ms. Jaishree and Mr. Manish Khamesra

We talk about the Mountain of INDRA or Mahendraparvata -The Lost Mountain City of God Indra and how A temple Mountain may also be designed as a MANDALA.

The reason why these huge temples were called Mountains, in the first place was because they were designed as Stepped pyramid thus becoming a beacon to the populous of the land and the devotees signifying a relationship with the Cosmos and behaving as a spiritual light -house. DR Uday Dokras



INTRODUCTION

Why were temples built? Why do we worship idols? The science of Temple Construction



Why were temples built? Why do we worship idols? The very nature of human perception is such that, right now, whatever a human being is involved with, that will be the only truth for him in his experience. Rulers built temples to demonstrate their devotion to various deities. They also endowed temples with grants of land and money to carry out elaborate rituals, feed pilgrims and priests and celebrate festivals. Pilgrims who flocked to the temples also made donations.

Various Kings who could afford to, built temples to favour their favourite deities. For example The Cola Kings built temples such as the Brihadisvara Temple at Thanjavur which is supposed to be the greatest achievement of Chola architects and the highlight of Dravidian architecture. The temple was built by the Chola King Rajaraja I between 1003 and 1010 AD. The sculptures and inscriptions here are related to Shaivism, Vaishnavism, and Shaktism. The quality of the sculpture here is also famous and the temple is one of the most visited religious sites in Tamil Nadu.



The other example one can give is that of Narasingha Deva I who is mentioned as Paramamahesvara, Durga-Putra and Purushottamaputra in the Chandrashekhera temple inscription. The titles show that he was a protector and a follower of the Shaiva, Shakti and Jagannath sects during his rule. A sculpture from the Konark sun temple built by him shows bowing before the three lead deities of the sects as per his titles and a priest. The Lingaraj temple inscriptions says that he had constructed a Matha (monastery) called as Sadashiva Matha to give shelter to the fleeing refugees from Radha and Gauda after the incursion by Muslim forces there. According to the Srikurmam temple inscription, he was a sober person without any bad nature and agitation. He possessed valuable articles and was a sincere learner of art, architecture and religion.

He administered the state by the traditions of Marici and Parasara while following the Niti sashtra (book of law). Due to his dedication towards faith and spirituality, he commissioned and completed the building projects for many temples like Konark, Kapilash, Khirachora Gopinatha, Srikurmam, Varaha Lakshmi Narasimha temple at Simhanchalam and Ananta Vasudeva temple which was built by the interest of his widowed sister, Chandrika. Sanskrit and Odia were both patronized as court languages during his rule and the Sanskrit masterpieces like Ekavali of Vidhydhara were written during this time. An inscription at Kapilash temple built by him compares him to the Varaha avatar (incarnation) of Vishnu who saved and raised the Vedas and the world from the oceans of uncertainty. He was the first king to use the title of 'Gajapati' or lord of war elephants among the Odishan kings.

The Konark temple complex is the creation of architects of his era and is a marvel of architecture is dedicated to Indian God of Sun, Surya. The temple has been built in the shape of his chariot which is drawn by seven horses. It was built in the 13th century by Narasimhadeva.

IDOL

Murti (Sanskrit: मूर्ति, ISO: *Mūrti*; lit. 'form, embodiment, or solid object') is a general term for an image, statue or idol of a deity or mortal in Hindu culture. In Hindu temples, it is a symbolic icon. A *murti* is itself not a god in Hinduism, but it is a shape, embodiment or manifestation of a deity. Murti are also found in some nontheistic Jainism traditions, where they serve as symbols of revered mortals inside Jain temples, and are worshiped in *murtipujaka* rituals.

A murti is typically made by carving stone, wood working, metal casting or through pottery. Ancient era texts describing their proper proportions, positions and gestures include the Puranas, Agamas and Samhitas. The expressions in a murti vary in diverse Hindu traditions, ranging from *Ugra* symbolism to express destruction, fear and violence (Durga, Kali), as well as *Saumya* symbolism to express joy, knowledge and harmony (Saraswati,

Lakshmi). Saumya images are most common in Hindu temples. Other murti forms found in Hinduism include the *linga*.

A murti is an embodiment of the divine, the Ultimate Reality or Brahman to some Hindus. In religious context, they are found in Hindu temples or homes, where they may be treated as a beloved guest and serve as a participant of *puja* in Hinduism. In other occasions, it serves as the centre of attention in annual festive processions and these are called *utsava murti*. The earliest murti are mentioned by Pāṇini in 4th century BCE. Prior to that the agnicayana ritual ground seemed to served as a template for the temple.

Murti is sometimes referred to as *murthi*, or *vighraha* or *pratima*. Murti, when produced properly, are made according to the design rules of the Shilpa Shastras. They recommend materials, measurements, proportion, decoration and symbolism of the murti. Explanation of the metaphysical significance of each stage of manufacture and the prescription of specific mantras to sanctify the process and evoke and invoke the power of the deity in the image are found in the liturgical handbooks the Agamas and Tantras. In Tantric traditions, a murti is installed by priests through the *Prana pratishtha* ceremony, where mantras are recited sometimes with yantras (mystic diagrams), whereby state Harold Coward and David Goa, the "divine vital energy of the cosmos is infused into the sculpture" and then the divine is welcomed as one would welcome a friend. According to Gudrun Buhnemann, the esoteric Hindu tantric traditions through texts such as *Tantra-tattva* follow elaborate rituals to infuse life into a murti. Some tantra texts such as the *Pancaratraraksa* state that anyone who considers an icon of Vishnu as nothing but "an ordinary object" made of iron "goes to hell". The use of murti and particularly the *prana pratistha* consecration ceremony, states Buhnemann, has been criticised by Hindu groups. These groups state that this practice came from more recent "false tantra books", and there is not a single word in the Vedas about such a ceremony.

A Hindu prayer before cutting a tree for a murti

Oh Tree! you have been selected for the worship of a deity,
Salutations to you!

I worship you per rules, kindly accept it.

May all who live in this tree, find residence elsewhere,

May they forgive us now, we bow to them.

—*Brihat Samhita* 59.10 - 59.11

The artists who make any art or craft, including murti, were known as *shilpins*. The formally trained *Shilpins* shape the murti not in accordance with fancy but in accordance with canonical manuals such as the Agamas and the Shilpa Shastras texts such as Vishvakarma. The material of construction range from clay to wood to marble to metal alloys such as panchaloha. The sixth century *Brihat Samhita* and eighth century text *Manasara-Silpasastra* (literally: "treatise on art using method of measurement"), identify nine materials for

murti construction – gold, silver, copper, stone, wood, *sudha* (a type of stucco, mortar plaster), *sarkara* (gravel, grit), *abhasa* (marble types), and earth (clay, terracotta). For *abhasa*, the texts describe working methods for various types of marble, specialised stones, colours, and a range of opacity (transparent, translucent and crystal).

Brihat Samhita, a 6th-century encyclopaedia of a range of topics from horticulture to astrology to gemology to murti and temple design, specifies in Chapter 56 that the *pratima* (murti) height should be of the sanctum sanctorum's door height, the *Pratima* height and the sanctum sanctorum room's width be in the ratio of 0.292, it stand on a pedestal that is 0.146 of sanctum room width, thereafter the text describes 20 types of temples with their dimensions. Chapter 58 of the text describes the ratios of various anatomical parts of a murti, from head to toe, along with the recommendation in verse 59.29 that generally accepted variations in dress, decoration and dimensions of local regional traditions for the murti is the artistic tradition.

Proper murti design is described in ancient and medieval Indian texts. They describe proportions, posture, expressions among other details, often referencing to nature.

The texts recommend materials of construction, proportions, postures and mudra, symbolic items the murti holds in its hands, colours, garments and ornaments to go with the murti of each god or goddess, vehicles of deities such as Garuda, bull and lion, and other details. The texts also include chapters on the design of Jaina and Buddhist murti, as well as reliefs of sages, apsaras, different types of devotees (based on bhakti yoga, jnana yoga, karma yoga, ascetics) to decorate the area near the murti. The texts recommend that the material of construction and relative scale of murti be correlated to the scale of the temple dimensions, using twelve types of comparative measurements.



In Southern India, the material used predominantly for murti is black granite, while material in North India is white marble. However, for some Hindus, it is not the materials used that matter, but the faith and meditation on the universal Absolute Brahman. More particularly, devotees meditate or worship on the formless God (nirguna Brahman) through murti symbolism of God (saguna Brahman) during a puja before a murti, or the meditation on a Tirthankara in the case of Jainism, thus making the material of construction or the specific shape of the murti not spiritually important.

The temples face sunrise, and the entrance for the devotee is typically this east side. The mandala pada facing sunrise is dedicated to Surya deity (Sun). The Surya pada is flanked by the padas of Satya (Truth) deity on one side and Indra (king of gods) deity on other.

Temples are built for deities, not gods.

Deities are “attributeless, formless” energy, or often “attributed formless” energy that can be invoked and “made resident” in any material representation - a material abstraction, personification or image. This process is known as the *pranapratishta*. And it is done so as to make it visible & relatable for the purpose of worship, even though we know that the process of worship is entirely internal.

We are all physical or material forms of deities as there is a “life force” within us. Deities in temples are thus just a physical representation of the divinity within. Divinity has many attributes, all of which can be worshipped individually or collectively based on the objective of the specific tantric practice.

So while a church is a church is a church (leave aside denominations), and a mosque is a mosque, each temple is different. Churches and mosques are not places of worship, they are places of congregation. A temple however, is always a place of worship, never a place of congregation.

The form and function of temples is thus very variable, though they are often considered by believers to be in some sense the "house" of one or more deities. Typically offerings of some sort are made to the deity, and other rituals enacted, and a special group of clergy maintain, and operate the temple.

Deities at our Temples

As a universal concept Hinduism accepts all formulations of Truth, According to the universal view there is only One Reality, but no particular name shape or form can adequately describe that Reality. Though Truth is One it is also Universal, not an exclusive formulation It is an inclusive Oneness – a spiritual reality of the Supreme Being – Consciousness – Bliss, which could be called God but which transcends all names and forms. The different Gods and Goddesses of Hinduism represent various functions of this One Supreme Divinity, and they are not separate Gods. Acceptance of other faiths, tolerance and pluralism are obvious corollaries to this great socio-religious principle of antiquity, Around the 6th century BC, the great Hindu philosopher, Adi Shankara grouped the

various forms of worship in Sanatana Dharma (Eternal code of conduct, Hinduism) into six sects (Shanmathas). They are:

- Ganapathyam ... The devotion to Lord Ganesha,
- Saivam ... The devotion of Lord Siva.
- Vaishnavam ... The devotion to Lord Vishnu.
- Sauram ... The devotion to the Sun God, or Fire.
- Shaktham ... The devotion to Sri Shakti (Durgaji)
- Kaumaram ... The devotion to Lord Kartikeya

Our temple has physical representations of all of the above except the Sun God. However, during Yajnas, Homas and other Poojas, we always worship the Fire God.

Minor Deities Administrative Gods



Indra, “the King of Heaven,” was apparently very popular in early Vedic Hinduism and is considered to be in charge of the administrative demigods. Here he is offering his obeisances to Lord Krishna in connection with the pastime, “The Lifting of Govardhan Hill.”

In addition to the twelve main deities listed previously there are also a number of minor deities (keeping in mind that certain Hindus may consider them more exalted or even Supreme!). They are generally considered to have specific roles within this universe.

The main ones are also considered to have charge over the eight directions, beginning with the East and moving clockwise (i.e. Indra is in charge of the East, Agni the South East, Yama the South, etc.).

- Indra: King of Heaven/ god of rain
- Agni: deity in charge of fire
- Yama: deity presiding over death
- Surya: presiding deity of the sun
- Varuna: presiding deity of water
- Vayu: presiding deity of the wind (air)
- Kuvera: treasurer of the demigods (god of wealth)
- Soma (Chandra): presiding deity of the moon

These deities are usually associated with earlier, “Vedic” Hinduism, and are rarely worshipped today, except perhaps Surya. Still prominent, especially in South Indian temples, is the worship of the “nine planets”.



Minor Deities

Deva or *devata* means demigod. *Sthala-devata* specifically refers to a minor deity who has jurisdiction over a particular place – a river, forest or village. They are often worshipped in village shrines. A popular deity is Sitala (right), the goddess of smallpox, who is worshipped in the hope of avoiding the disease

Other “Higher Beings”

There are many other lesser deities and higher beings, who often appear in the various stories. These include:

- The Asuras (demons) who always fight
- The Devas (the gods or demigods)
- The Apsaras (celestial nymphs)
- The Nagas (celestial serpents)
- The Gandharvas (heavenly singers)
- The Rakshasas (a race of man-eaters)
- The Prajapatis (progenitors of mankind)

“Modern” Deities

Some deities have risen to prominence more recently. They include:

- Santoshi Ma – the goddess of contentment, worshipped mainly by ladies
- Ayyappan – popular in Kerala, he is considered the son of Shiva and Mohini (the female incarnation of Vishnu)

Construction of a Temple 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. Scientific reasons for visiting the temples There are thousands of temples all over India in different size, shape, and locations but not all of them are considered to be built in a Vedic way. It is said that in the ancient times, a temple should be located at a place where the earth magnetic wave path passes through densely.

How the energy quotient of a place was measured is not known but keeping in mind the lost advance science fundas of our ancient saints, they would have

figured a way out. Location of the deity Temples are located where there is positive energy available from magnetic and electric wave distributions of north or 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. There is a metal plate beneath the statue Did you notice a copper plate beneath the main idol in the temples? what could be the reason for this? It is believed that these copper plates absorb the magnetic force and radiates it to the surroundings. The person visiting the temple would receive the beamed magnetic waves.

This a very slow process and a regular visitor would eventually start feeling the positive vibes. The holy water The curd, honey, milk, sugar and coconut water made by which we clean the copper idol is believed to make the amrit a blessing. Moreover, the holy water that comprises basil leaves and karpur(camphor) help to fight diseases like cold and cough. The magic of temple bells A temple bell is another scientific phenomena; it is not just your ordinary metal; It is made of various metals earth including cadmium, lead, copper, zinc, nickel, chromium, and manganese. The proportion at which each one them mixed is real science behind a bell. Each of these bells is made to produce such a distinct sound that it can create unity of your left and right brain. What happens when you ring the temple bell The moment you ring the bell, it produces the lasting sound which lasts for a minimum of seven echo mode which is good enough to touch your 7 healing chakras. The ebreian empties all your thoughts. Invariably you enter into a state of trans where you are very receptive. the trans-state the one with awareness.

Temples as places of energy Charging: Don't just visit the temple, sit. The belief is never to visit the temple and go. traditionally, the belief is that one who visits and goes the visit would be fruitless. This is so because temples are built like a public charging place, people can charge themselves with their inner energies. People visited the temple before they entered into their daily work so that they could go about with a certain sense of balance and depth in their lives. No Footwear in Temple. Temples are a place where it contains pure vibrations of magnetic and electric fields with positive energies. In olden days the floor at the center of the temple were good conductors of these positive vibration allowing them to pass throughout feet to the body. Hence it is necessary to walk barefooted while you enter the core center of the temple. Parikrama The idol inside the chamber absorbs all the energy from the bell sound., Camphor heat and vibrates the positive energy within the chamber for a certain duration of time. When you do the circumambulation at this point of time, you tend to absorb all these positive vibrations once your five senses are activated.¹_____

1. <https://www.thehansindia.com/life-style/spiritual/temple-thursdays-temple-science-shocking-science-behind-hindu-temples-541564?infinitescroll=1><https://shekharsk.wordpress.com/shocking-science-behind-hindu-temples/>

CHAPTER II

The Interconnect between MOUNTAINS & TEMPLES OF CAMBODIA



From approximately the third century BCE through the thirteenth century CE, the remote mountainous landscape around the glacial sources of the Ganga (Ganges) River in the Central Himalayas in northern India was transformed into a region encoded with deep meaning, one approached by millions of Hindus as a primary locus of pilgrimage.

Nachiket Chanchani's innovative study *Nachiket Chanchani, Mountain Temples and Temple Mountains: Architecture, Religion, and Nature in the Central Himalay* explores scores of stone edifices and steles that were erected in this landscape. Through their forms, locations, interactions with the natural environment, and sociopolitical context, these lithic ensembles evoked legendary worlds, embedded historical memories in the topography, changed the mountain range's appearance, and shifted its semiotic effect. *Mountain Temples and Temple Mountains* also alters our understanding of the transmission of architectural knowledge and provides new evidence of how an enduring idea of India emerged in the subcontinent. Cambodia was first influenced by Hinduism during the beginning of the Kingdom of Funan. ... Angkor Wat, the largest temple complex in the world (now Buddhist) was once a Hindu temple. The main religion adhered to in Khmer kingdom was Hinduism, followed by Buddhism in popularity. Angkor Wat, temple complex at Angkor, near Siēmréab, Cambodia, that was built in the 12th century by a Hindu King King Suryavarman II (reigned 1113–c. 1150). The vast religious complex of Angkor Wat comprises more than a thousand buildings, and it is one of the great cultural wonders of the world.

According to Embassy of India in Cambodia,

India-Cambodia cultural and historical relations are more than a millennium old when Indian culture, religion and trade emanated out of India and spread rapidly in various parts of South-East Asia. However, Cambodia witnessed Indian influence centuries before that whose living example is the temples of Sambor Prei Kuk built by Ishanvarmana I and other kings of Chenla empire during 6th and 7th Century AD in Ishanapura, the then capital of the Kingdom, which is so far the oldest known example of existence of Indian culture and religion in Cambodia. However, some scholars are of the opinion that the cultural and religious connect between India and Cambodia date back to 1st century. According to Cambodian belief, Khmer people's founding legend centers around an Indian prince Kaundinya called Preah Thaong in Cambodian

folklore. Cambodian society which is now predominantly Buddhist retains a strong influence of Indian Hindu and Buddhist rituals, idolatry and mythology which can be seen in many of its rituals having resemblance with Indian culture and traditions. Khmer language too is a live example of Indian culture which has approximately more than 3000 words originated from ancient Indian Sanskrit language. Later the pervading influence of Hinduism, Buddhism, and Indian architecture are borne out by the magnificent structures at Angkor Wat, Angkor Thom, Bayon, Ta Prohm, Bantey Srei, Preah Vihear and other religious and historical sites in Cambodia. In order to strengthen our old age close cultural links, Cultural Exchange Programme (CEP) between India and Kingdom of Cambodia was signed in 2000 which has been renewed from time to time. During the State Visit of Prime Minister Hun Sen to India in January 2018, the CEP has been renewed for a further period of four years till 2022. During recent visit of Hon'ble EAM, a Memorandum of Understanding between the Government of India and National Authority on Preah Vihear has been signed for restoration of some parts of Preah Vihear.

temple. <https://www.embindpp.gov.in/pages?id=nel5a&subid=mep2b>, press release 2021

RELIGION IN CAMBODIA

Today about 95 percent of the population are Theravada Buddhists, which is also the dominate form of Buddhism in Thailand, Laos, Myanmar and Sri Lanka. The Khmer Rouge destroyed many religious buildings and tried to stamp out religion itself. Buddhism and other organized religions have not yet recovered from this period. The Cham minority is mostly Muslim. Many of the hill tribe minorities are animists. Daoism and Confuism are also commonly practiced among the Chinese people.

Cambodians have traditionally been devotedly Buddhist and incorporated elements of animism, Hinduism and Chinese religion and beliefs about heaven and hell and ghost and spirits in a uniquely Khmer way.

The Khmer Rouge tried to eliminate religion Buddhism. Religion and prayer were banned. Monks were killed or disrobed, or sent to the fields to work as slave laborers, and temples were destroyed, desecrated and even used as death camps. Almost all the Muslims that lived in Cambodia were killed.

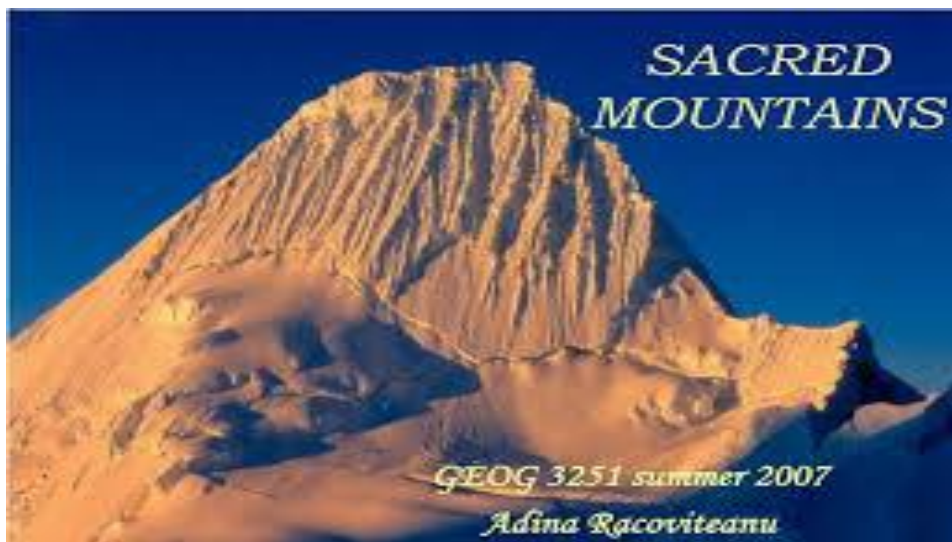
Sacred mountains **are central to certain religions** and are the subjects of many legends. For many, the most symbolic aspect of a mountain is the peak because it is believed that it is closest to heaven or other religious worlds. Many religions have traditions centered on sacred mountains, which either are or were considered holy (such as Mount Olympus in Greek mythology) or are related to famous events (like Mount Sinai in Judaism and descendant religions). In some cases, the sacred mountain is purely mythical, like the Hara Berezaiti in Zoroastrianism. Mount Kailash is believed to be the abode of the Hindu deities Shiva and Parvati, and is considered sacred in four religions: Hinduism, Bon, Buddhism, and Jainism. Volcanoes, such as Mount

Etna in Italy, were also considered sacred, Mount Etna being believed to have been the home of Vulcan, the Roman god of fire and the forge. A Brief History of Phnom Kulen, the Most Sacred Mountain in Cambodia



Some Buddhist statues at the base of Wat Preah Ang Thom © Steve Estvanik/

History shows that mountains were commonly part of a complex system of mountain and ancestor worship. Having immortalized fallen brethren in the edifice, the people share a common allegiance with all the other people of a community. The meanings that were etched into the mountain and mound terrain connected the villagers. They were all subject to the same landscape and village history, which were bound together by their cultural significance. The history of ancestors could be told by simply pointing at specific mountains and remembering the stories that were passed down throughout the generations. The worship of ancestors and the mountains were largely inseparable. An interconnected web between history, landscape, and culture was thus formed. Examples of this would be the Hindu belief that Mount Kailas is the final resting place for the souls of the dead, as well as the large cemetery placed on Mount Kōya-san.



Sacred mountains can also provide an important piece of a culture's identity. For example, Bruno Messerli and Jack Ives write, "The Armenian people regard Mount Ararat, a volcano in eastern Turkey believed to be the site of Noah's Ark in the Bible, to be a symbol of their natural and cultural identity".^[3] As a result of the mountain's role as a part of a cultural identity, even people who do not live close to the mountain feel that events occurring to the mountain are relevant to their own personal lives. This results in communities banning certain activities near the mountain, especially if those activities are seen as potentially destructive to the sacred mountain itself

Interaction and syncretism between animistic practices and Buddhism contributed to the symbiosis between the two religions (and Hinduism that was the forerunner to Buddhism therfe.¹

Indigenous communities in Cambodia have traditionally been adherents to what some call 'animist' religions, though there are exceptions such as the Kuy who have a long history of Buddhist influence. Animism is a term historically used to denote a wide range of traditional syncretic spiritual systems, in which there is little separation between the material and spiritual worlds. Human, as well as the non-human (animals, plants, etc.) and the non-living (rocks, streams, etc.), are seen as having spirits with which living humans cohabit (Bird-David 2002). These spirits play a major role in both the practical and cultural life of animist communities, influencing everything from the agricultural cycle and livelihood activities to the schedule of village festivals, which build solidarity and unify communities. While animism is a convenient label for discussing these diverse traditions, many have found its use problematic, indicative of a Western misconception about the nature of spirituality. Robert Winzeler, professor of Anthropology at University of Nevada Reno, expresses this view, observing that "this august term is in some ways unfortunate. It reflects the Western tendency to think that religion is primarily a matter of belief or faith, rather than a combination of belief and behavior (or ritual), which is actually always the case."²

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1. The Place of Animism within Popular Buddhism in Cambodia the Example of the Monastery Ang Chouléan, Asian Folklore Studies, Vol. 47, No. 1 (1988), pp. 35-41 (7 pages), Published By: Nanzan University
 2. Indigenous Spirituality in Cambodia: September 2011 Implications for Development Programming, World Faiths Development Dialogue | 3307 M Street NW | Suite 200 • Washington, DC 20007. report is part of WFDD's ongoing efforts since 2009 to "map" the development work of faith-inspired organizations in Cambodia. The goal is to promote understanding and a better-informed dialogue among faith-inspired and secular development partners on issues of common concern. The report follows a November 2010 publication, Faith-Inspired Organizations & Development in Cambodia, and explores in greater detail the often-misunderstood indigenous faith traditions in the country, contributing to a better understanding of how indigenous spirituality is relevant to development priorities. It explores the nature of indigenous spiritual systems in Cambodia, emphasizing the indigenous conception of landscape, which blends the physical and the spiritual, particularly in the case of spirit forests. file:///C:/Users/UDAY/Downloads/indigenous-spirituality-in-cambodia-implications-for-development-programming.pdf

In 1998, 1.2 % of the country's population was indigenous minorities in Cambodia, but before the advent of hinduism and later Buddhism, one can assume that 100% of the population was of indigenous minorities and if not then their beliefs were centered on animistic concepts of which ancient spirit worship and mountain realms of the spirits could have been paramount.

Animism in Cambodia ²

Animism is manifested mostly in the lingering belief in supernatural beings. These include spirits that inhabits mountains, forest, rivers and other natural objects; guardian spirits of houses and animals and fields; ancestral spirits; and malevolent beings, hosts and demons. Some spirits are regarded as helpful but most are regarded as troublemakers who can cause sickness or bad luck especially to those who have engaged in improper behavior.

Among tribes in northeast Cambodia Arak Chantoo, the mountain spirt, is regarded as the chief god. He presides over other gods. When he is angry he causes chest pains, headaches, dizziness, high fever and sometimes death. Arak Bree, the forest spirits, presides over cultivation. Arak Ghree, the tree spirit, must be appeased before cutting down a tree. Arak Gow protects sacred stones and can cause headaches and insanity. Washing stones with the blood of sacrificed animals is one cure for problems caused by troublesome spirits.

The Brao, Tampuan, Kreung, Bunong and other highlander groups of northeast Cambodia believe that malevolent spirits inhabit the local ecological milieu. We are forever in danger of offending these angry, invisible celestial beings if certain etiquette is broken –if, for instance, land is cleared in a spirit forest, or if the wrong type of animal is hunted, or if signs in nature are ignored and we do things that we shouldn't do. The punishment is usually injury, illness, or death. In any case, the village "magic man" or shaman is consulted, he or she communicates with the spirits to find out what is wrong, and he will tell the victim and family what is needed to remedy the situation—usually a chicken or a pig and several vases of rice wine.

“Some highlanders—usually the older ones—still believe that certain mountains—such as Haling-Halang deep inside Virachey, or Krang Mountain on Veal Thom—or certain areas of forests, are off-limits to hunting and logging. If this etiquette can be maintained, then animistic beliefs in "spirit places" can act as conservation tools. In that sense, animism is the oldest form of environmental conservation: certain places are off limits to human activity because they have been deemed sacred. ^

“It is believed that the God of Haling-Halang is so powerful that airplanes cannot fly over it, and fires cannot burn it. Brao elders maintain that even when the Americans were dropping thousands of bombs on the area during the war that Haling-Halang never burned. Favors of Haling-Halang require a

human sacrifice, and for that reason, villagers don't seek its help. A combination of its remoteness and its sacredness has resulted in it being a relatively undisturbed massif ecosystem to date. But there are other, smaller places, such as a spirit forest outside of Kroala Village in O-Chum district outside of Ban Lung. The spirits of this little 300 square meter forest are so strong that five men recently died simply from standing in its shadow. Another man died after he tried to clear some of the woods to establish a small farm there. Villagers are now so afraid of it that even the Christians won't go near it. The result is that barking deer, wild boar, civet cats, Giant Asian squirrels and birds find refuge there amidst a sea of cashew nut plantations.

Animism is, even today, particularly alive among the hill tribes in northeast Cambodia and to a lesser extent among ordinary Cambodians. People guard against ghosts by placing effigies on their doorways and fence posts. Sometimes barking dogs and strange noises by livestock are believed to alert people of the presence of ghosts.

MOUNT KULEN THE HOLY MOUNTAIN

Sitting about 50km (30 miles) from Siem Reap town, Phnom Kulen is considered to be Cambodia's most sacred mountain. Locals flock to the holy site daily to pray, leave offerings, stroll through the national park or picnic next to one of the waterfalls. Here's a brief history of the famous summit.



**The entrance to Phnom Kulen's temple in the Kulen National Park
Tropical waterfall Phnom Kulen**

Phnom Kulen, or Kulen mountain, has its roots steeped deep in Khmer tradition, dating back to 802AD when Jayavarman II was said to declare himself a *devaraja* – ‘god-king’ – at its peak. The path to the peak passes the famous River of a Thousand Lingas, etched with carvings of Hindu gods and symbols, believed to date back to the reign of King Udayadityavarman II and a waterfall just above the lingas.



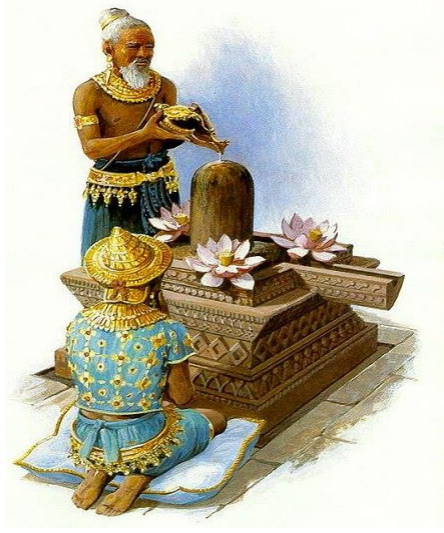
One of the carvings in the river of 1,000 lingas | © Pagnarith Sao/ Shutterstock

The river sits at the base of Wat Preah Ang Thom, a sacred temple and place of worship for Cambodians. Visitors are reminded to remain respectful, covering shoulders and knees, and removing shoes at the base of the steps.

As well as offering spectacular panoramic views of the surroundings, the wat also houses ancient scripts and a giant, reclining Buddha. The temple can only be accessed after 11am, with those wanting to come down having to wait until after noon.

The reclining Buddha at Wat Preah Ang Thom | © Marissa Carruthers

The waterfall, which had a cameo role in *Lara Croft: Tomb Raider*, gushes strongly during wet season and much less so throughout the dry months. It's suitable for swimming, with many locals taking a dip after enjoying a picnic there.



The Kulen is so sacred that Jayavarman II got himself coronated as a DEVRAJA on the top of the mountain as per inscriptions discovered but which are 200 years later to the approximate date of the coronation and thus not entirely reliable. It also means that the 'sacredness' of the mount pre-dates Jayavarman II and was well established by the time he grew up.

See my 3 BOOKS

1. **Newer Essays on Khemer inspired by Jayavarman II**
2. **THE BATTLES for Angkor Wat or Preah Pisnulok-**
3. **New Essays on ANGKOR**





Description

Phnom Kulen range is located 30 km northeast of Angkor archaeological site, Siem Reap province, northwest Cambodia. It is registered since 1992 on the Government of Cambodia’s tentative list as a World Heritage potential cultural site, with the criteria V and VI. Phnom Kulen means the Mountain of Leeches in Khmer. According to the old Khmer inscriptions (and particularly Sdok Kak

Thom inscription), the mountain is known as Mahendraparvata, the mountain of the Great Indra, an ancient city established at the late 8th-early 9th-centuries, comprising several temples, the religious remains of this former capital of the Khmer Empire. The capital was settled on the plateau, located 70 Km to the south of the Dangrek Mountains, and 30 Km away from the great Tonle Sap Lake. Today, the Phnom Kulen national Park is a 37,375-hectares protected area, located in Banteay Srey, Svay Leu and Varin districts, in Siem Reap province.

Mahendraparvata (See next Chapter) is an ancient city of the Khmer Empire era in Cambodia. The existence of the city has been known for decades, but much of it lay concealed by forest and earth. The city was uncovered by an archaeological expedition led by Jean-Baptiste Chevance and Damian Evans in 2012 with the aid of airborne laser scanning technology called LIDAR.

Early Khmer societies developed extensive settlement complexes that were largely made of non-durable materials. These fragile urban areas perished many centuries ago, and thus a century and a half of scholarly research has focussed on the more durable components of Khmer culture, in particular the famous temples and the texts and works of art that are normally found within them.

In recent years however there has been a considerable effort to broaden the perspective beyond conventional approaches to Khmer history and archaeology. Remarkable advances have been made in the domain of remote sensing and archaeological mapping, including the application of advanced geospatial techniques such as airborne laser scanning within studies of heritage landscapes at Angkor and beyond. The results of a newly-completed campaign of airborne laser scanning in 2015—the most extensive acquisition ever undertaken by an archaeological project—and underscores the importance of using these methods as part of a problem-oriented research program that speaks to broader issues within history and archaeology.

The name Mahendraparvata means "Mountain of the Great Indra". महेन्द्र पर्वत – Mahendra or *Great Indra*, a title of the Hindu god Indra) and Parvata or *mountain* and is a reference to the sacred hill top site commonly known as "Phnom Kulen" today where Jayavarman II was consecrated as the first king of the Khmer Empire in 802. The name is attested in inscriptions on the Angkor-area Ak Yum temple. Mahendraparvata is located 40 kilometres (25 mi) north of the Angkor Wat complex, 45 kilometres (28 mi) north of Siem Reap, on the slopes of Phnom Kulen mountain in Siem Reap Province.

The multi-year archaeological expedition to find Mahendraparvata was co-led by Damian Evans of University of Sydney and Jean-Baptiste Chevance of London's Archaeology and Development Foundation. The team announced their initial findings in June 2013. A key feature of the expedition was its use of helicopter-mounted Lidar technology to scan the Phnom Kulen area and then map the city

layout. The scanning phase involved seven days of helicopter operations. The Lidar results confirmed ground-based research by previous archaeologists. But, according to Chevance, before this they "didn't know how all the dots fitted, exactly how it all came together".

Airborne laser scanning as a method for exploring long-term socio-ecological dynamics in Cambodia, Author links open overlay panel, Damian Evans, *Journal of Archaeological Science*, Volume 74, October 2016, Pages 164-175 <https://www.sciencedirect.com/science/article/pii/S0305440316300644>,

The ground phase of the expedition traversed goat tracks and watery bogs, the team having got to their starting point by motorbike. Hazards included landmines. They initially uncovered five new temples. Eventually, using the Lidar data, thirty previously unidentified temples were discovered. In addition to the temples, their research showed the existence of an elaborate grid-like network of roads, dykes and ponds forming the city. Dr. Evans also noted that expedition imagery shows that the area became deforested, and he theorises that the impact of this, and water management issues, led to the civilisation's decline.

The expedition team have dated Mahendraparvata's origins to 802 AD. Thus the city predates Angkor Wat by about 350 years.

The city's origins date to the reign of Jayavarman II, considered the founder of the Khmer Empire. His reign was consecrated on the sacred mountain of Mahendraparvata, known as Phnom Kulen in contemporary Cambodia. The city he founded at Mahendraparvata was one of three capitals, or courts, of Jayavarman II's reign, the others being Amarendrapura and Hariharalaya.

The 1936 expedition of French archaeologist and art historian Philippe Stern had also explored the Phnom Kulen highlands. He discovered some previously unknown temples and Vishnu statues and described the area as the first true temple mountain. But the area, while being the source of rivers flowing south to the Tonle Sap, was remote. Later in his reign, Jayavarman II moved to Hariharalaya where he died in 835 AD.







The ancient Mahendraparvata (late 8th-early 9th centuries) on Phnom Kulen is today a partially forested site containing about 40 brick temples, including one pyramid mountain-temple, as well as ancient reservoirs, dykes with spillway, channels, ponds, plots, platforms, and earthen mounds, all part of an ancient urban system.

Other later archaeological remains are also located on Phnom Kulen such as dozen prehistoric sites with rock paintings, more than 40 rock shelters occupied by hermits from the 10th century, including 2 sculpted riverbed (Kbal Spean and the One Thousand Linga), ceramic kilns dated from the 10th to 11th centuries, a late Angkorian temples such as Prasat Krol Romeas located at

the large natural waterfall (end of the 12th century), and the large and very much venerated nowadays Preah Ang Thom reclining Buddha.

Phnom Kulen is located in Northwest Cambodia, such as the others Cambodian Cultural World Heritage sites: Angkor, Preah Vihear and Sambor Prei Kuk. The mountain range is also at the origin of the Siem Reap River, as well as the other main rivers of Angkor region (Puok and Roluos). It has a major role for the local aquifer and for the surface water, draining most of the plateau before reaching Angkor, nourishing its entire hydraulic system, the major reservoir (*baray*) and the temples or city moats through a network of channels, and ending in the great Tonle Sap Lake.



In addition, Phnom Kulen holds a major symbolic significance for the ancient Khmer Empire as, according to ancient inscription, King Jayavarman II proclaimed independence from *Java* in 802 CE from the city of Mahendraparvata. There also, this king initiated the first Devaraja cult of the king, as stated in Sdok Kak Thom inscription (Michael and Evans, 2018: 118). Among local recent legends, one identifies the mountain with the place where Buddha stepped a foot, when the entire country was flooded.

Recently, the LiDAR technology has revealed a very large and formally planned network of oriented earthen dikes forming axis. This urban grid connects previously known, temples, and the water infrastructures, such as the dams blocking the valleys of the plateau and creating large reservoirs. Organizing the landscape on a large scale (more than 40 km²), it also organizes settlement plots. Most of the temples are single brick towers, attributed to Jayavarman II reign. One of them stands out, Prasat Rong Chen, the five-tiered pyramid temple built on the highest point of the southern part of the plateau. Partially constructed from leveling or soils embankments (first two levels) and laterite blocks (last three levels), the temple's top level is accessible by ramps, unique remains of a construction left unfinished. An unfinished large reservoir, or *baray*, was also evidenced thanks to the Lidar technology. Additionally, the Royal Palace of the ancient capital (Banteay) was identified in 2009 (Chevance, 2014) and confirms the presence of the king and his court on the plateau, at the early 9th century. Mahendraparvata (Phnom Kulen) is, therefore, very

significant as it is one of the earliest capitals of the Angkor period, which extended from the 9th to 15th centuries.

Systematic archaeological survey and excavations have identified an array of cultural features. There are more extensive of a large settlement than the historical record indication. For instance, later Angkorian inscriptions often refer to Jayavarman's capital on the plateau, but no inscriptions dating from that period have been found so far in Phnom Kulen. However, the significant infrastructures in Phnom Kulen demonstrated the "first engineered landscapes of the era, offering key insights into the transition from the pre-Angkorian to Angkorian period, including innovations in urban planning, hydraulic engineering and sociopolitical organization that would shape the course of the region's history for the next 500 years" (Chevance et al, 2019: 1305). Mahendraparvata on Phnom Kulen, "therefore, represents a significant milestone in the development of urban form/in the region" (Chevance et al, 2019: 1317).

It is believed that "the grid of major axes provides the overall framework upon which other patterns of habitation are based and elaborated". According to Lidar and following field verification researchers "found hundreds of ponds within the central area, only two of them interrupt the course of the major axes, the other ponds are scattered within the city blocks" (Chevance et al, *ibid*). Several evidences "suggest that the central grid was laid out before, or during, the elaboration of the habitation network, and that the two systems functioned contemporaneously" (Chevance et al, *ibid*).

The existence of a royal palace, numerous temples and neighbourhoods, indicate that a royal court was located on the Kulen plateau. A substantial population living in "an extensive, well-defined, built-up area" supports it (Chevance et al, 2019:1318). "This area was clearly of parceled neighbourhoods indicate that it was not merely a vacant ceremonial centre.

Prior to the Mahendraparvata construction, "the evidence shows that settlement patterns in the Angkor region comprised small, loosely structured urban areas that lacked any formal grid, had no clear boundaries and appear to have developed organically without a coherent plan. Beyond the Angkor region, a handful of centres show evidence of enclosing walls, for instead, at the sixth to eight centuries AD site of Sambor Prei Kuk. On the other hand, these much smaller in scale than at Mahendraparvata and contain no internal grids. Thus, Mahendraparvata marks an important point of departure, and appears to represent the first large-scale 'grid city' elaborated in the Khmer world. It would be some time before such a design would be fully realized again in the Angkor region. The ninth-century AD city of Hariharalaya, the capital immediately following Mahendraparvata, contains a monumental core but, overall, evinces an organic layout typical of the early Angkorian 'open cities' (Evans 2010; Pottier 2012). It is only in the tenth and eleventh centuries AD

that the massive linear axes and internal frameworks of cities appear again in the Angkor region (Gaucher 2017), and not until the twelfth century that we have unambiguous evidence for gridded cities achieved on the same scale as Mahendraparvata (Evans 2016). Hence, the urban network revealed by lidar and described here seems to form an enormous and remarkably early experiment in formal urban planning. The urban model that first developed on this mountain plateau, although sparsely inhabited at the time and not widely adopted straight away, would eventually be adapted to the low-lying floodplains of Angkor, and become a prototype for high-density urban centres at the height of the Khmer Empire” Mahendraparvata map bring new insights regarding the history of the Angkorian urbanism. It combines the two previously identified forms (Evans et al, 2013; Evans, 2016), while missing many other elements. It has an extended city grid, but without any attempt to define a central area with a wall or moat; the central grid does not appear to have been densely inhabited; and there is little evidence for intensive agricultural activity or a broader network of low-density occupation revolving around fields and ponds. Hence, while Mahendraparvata is immediately recognizable as Angkorian, and identifiably ‘urban’, it is totally unique in the Khmer world in its development of urban form.

Moreover, the architecture and art of Phnom Kulen, moreover, indicate the development of a unique style during the reign of Jayavarman II, at the end of the 8th century. The sandstones decorative architectural elements (columns and lintels) and the sculptures progressed to a unique and a new “Kulen style”. This style illustrates a transition from the previous pre-angkorian styles to the future angkorian and post-angkorian styles.

After this early capital of the Khmer Empire was abandoned as the siege of power, the court moved from Mahendraparvata on Phnom Kulen to (Hariharalaya in Rolous, 15 Km east of the future Angkor). Phnom Kulen site continued to be considered as a sacred mountain and later archaeological sites show, it was never completely abandoned. Epigraphic evidence indicated that Kings consecrated sculpture riverbed (Kbal Spean) and later temples and particular infrastructures such as channels, stairways, ceramic kilns or mounds fields evidence an occupation of the Phnom Kulen during the angkorian period. Nowadays, several Phnom Kulen archaeological sites still hold a sacred value for Cambodians and are the witnesses of an important worship by Khmer people, coming from the entire country. Monks and modern hermits often reused hermit’s sites, insuring a sacred continuity, and numerous legends, folktales, and narratives continue to be associated by the local communities to the archaeological sites.

Finally, Phnom Kulen is also known to host the ancient quarries, where the sandstone blocks were extracted. From Phnom Kulen site, a complex and long network of channels and parallel raised earthen road allowed their transportation to Angkor, to build the prestigious religious monument, from the 10th century. Phnom Kulen ancient quarrying industry, known from the

late 19th century, was developed on a very large scale, recently revealed by the Lidar (Evans, 2017). It has left numerous localized pits with high stepped surfaces forming a complex network of stone exploitation.

Comparison with other similar properties

The Mahendraparvata site on Phnom Kulen can be compared to four of ten different of World Cultural Heritage sites: on a national, sub-regional, regional and international level. This is not only complying with other World Heritage criteria, but also reflecting the period, features and characteristics, such as the influence of town-planning, urban infrastructure, language, religion, architecture, materials and hydrology.

1. National- Bakong temple (Cambodia: the 9th century C.E.): Bakong temple is the first temple mountain covered with sandstone, constructed by rulers of the Khmer empire at Hariharalaya, the capital right after Mahendraparvata, where the Jayavarman II declared the sovereignty of Cambodia. His successor, Indravarman I constructed the Bakong temple dedicated to the god Shiva and consecrated its central religious image, a linga whose name Sri Indresvara. The Devarāja cult, similar to Mahendraparvata's on Phnom Kulen, consisted in the idea of divine kingship of royal power. The structure of Bakong has a stepped pyramid shape, similar to Rong Chen in Mahendraparvata, both identified as early example of Khmer temple mountain.

In addition, the Bakong pyramid temple has been covered with high bas-relief, representing asuras in battle. Large stone statues of elephants are positioned as guardians at the corners of the three lower levels of the pyramid and statues of lions guard the stairways.

Phnom Bakheng Temple (Cambodia: late 9th to 10th centuries): Phnom Bakheng temple is a mountain temple located in Angkor. Phnom Bakheng is one of three hilltop temples in the Angkor region that are attributed to Yasovarman's reign (889-910 C.E). The other two are Phnom Krom to the south near the Tonle Sap lake, and Phnom Bok, northeast of the Eastern *baray* reservoir. Phnom Bakheng is a symbolic representation of Mount Meru, home of the Hindu gods. This is a similar configuration with Rong Chen temple in Mahendraparvata/Phnom Kulen and Bakong temple at Hariharalaya Rolous. However, The Bakeng temple is built in a pyramid form of seven levels, representing the seven heavens. There are five sandstone sanctuaries on the top level. Originally, 108 small towers were arrayed around the temple at ground level and its tiers. Bakeng temple built on a rectangular base and rise in five levels and is crowned by five main towers. One hundred and eight are considered the level of the god and haven. These 33 can be seen from the center of any side, but thirty-three is the number of gods who dwelt on Mount Meru. The center one represents the axis of the world and the 108 smaller ones represent the four lunar phases, each with 27 days. The seven levels of the monument represent the seven heavens and each terrace contains

12 towers, which represent the 12 years cycle of Jupiter. Thus, it is an astronomical calendar in stone.

2. **Baksei Chamkrong (10th century):** Baksei Chamkrong is a small Hindu temple located in Angkor. It is dedicated to lord Shiva and used to hold a golden image of him. It was also dedicated to Yasovarman by his son, King Harshavarman I. This temple is constructed by bricks and laterite with architectural decoration in sandstone. There is an inscription on either side of the doorway, which details the dedication and praises the early Khmer kings, quoting Jayavarman II who settled in Mahendraparvata on Phnom Kulen. The main sandstone lintel is decorated with a fine carving of Indra standing on his three-headed elephant Airavata. The brick sanctuary tower and eight meters square on a sandstone base open to the east.

3. **Sub-regional-Borobudur temple (Indonesia: 9th century C.E.):** Borobudur pyramid temple was constructed by the Sailendra dynasty in the 9th century, in Central Java.



Borobudur is a unique temple located in an elevated area between two twin volcanoes and two rivers. Enormous amount of stones, approximately 55,000 cubic meters, used in the construction of Borobudur were taken from neighboring rivers. The stone was cut to size, transported to the site and laid without mortar. It is the world's biggest Buddhist monument, an ancient site widely considered to be one of the world's seven wonders. ... The architecture and stonework of this temple has no equal. Borobudur is the largest Buddhist temple in the world, and ranks with Bagan in Myanmar and Angkor Wat in Cambodia as one of the great archeological sites of Southeast Asia. Borobudur remains popular for pilgrimage, with Buddhists in Indonesia celebrating Vesak Day at the monument. The Borobudur monument combines the symbolic forms of the stupa (a Buddhist commemorative mound usually containing holy relics), the temple mountain (based on Mount Meru of Hindu mythology), and the mandala (a mystic Buddhist symbol of the universe, combining the square

as earth and the circle as heaven). It covers an enormous area, measuring 123 x 123 meters. The monument is a marvel of design, decorated with 2,672 relief panels and 504 Buddha statues. The architecture and stonework of this temple has no equal. And it was built without using any kind of cement or mortar! The structure is like a set of massive interlocking Lego blocks held together without any glue.

The temple has remained strong even through ten centuries of neglect. It was rediscovered in 1815, buried under volcanic ash. In the 1970's the Indonesian Government and UNESCO worked together to restore Borobudur to its former majest



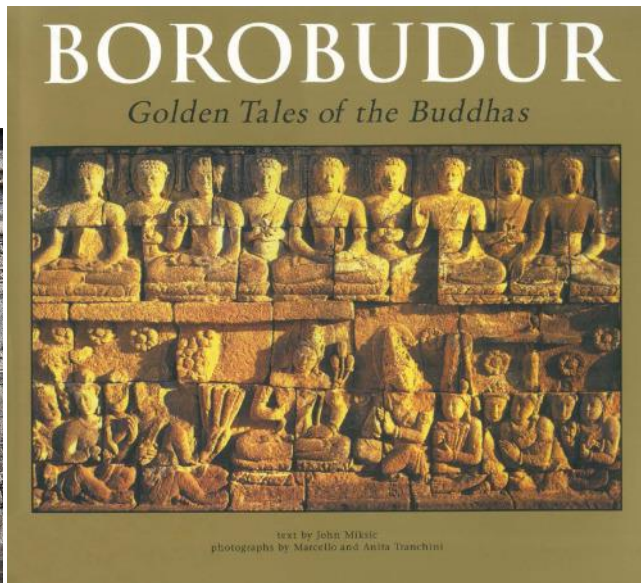
It is dedicated as a Mahayana Buddhist temple, consisting of nine stacked platforms, six square and three circulars, topped by a central dome. The temple demonstrates the influences of Gupta art and reflects India's influence on the region, but there are more elements to make Borobudur unique. Borobudur indicates a similarity with Bakong at Rolous and Rong Chen on Mahendraparvata/Phnom Kulen during 9th century C.E. The structure of Rong Chen and Bakong took shape of stepped pyramid, popularly identified as temple mountain of early Khmer temple architecture, but Borobudur worshiped on Buddhism.

The striking similarity of both temple sites demonstrate similar into architectural details such as the gateways, sculpture decoration, stairs to the upper terraces. It is a Buddhist temple, but without an altar or sanctuary. Instead, it boasts six square platforms on which sit 3 circular platforms, and is decorated with galleries that form a ring around the structure. There are 504 statues of the Buddha. There is also a main dome that is surrounded by 72 Buddha statues. The Borobudur temple was at a height of 137 feet (42 meters) before the restoration, but is now only 113 feet (34.5 meters) after the restoration was complete. It had 10 floors, with the first 6 floors built as squares, and the last 4 built as circles.

I have not covered Borobudur in detail here, because it also features on 2 books of mine.

1. The Celestial Mysteries of the Borobudur Temple(with Digital art by the contemporary artist from U.K and my friend Ms. Kerry Penny

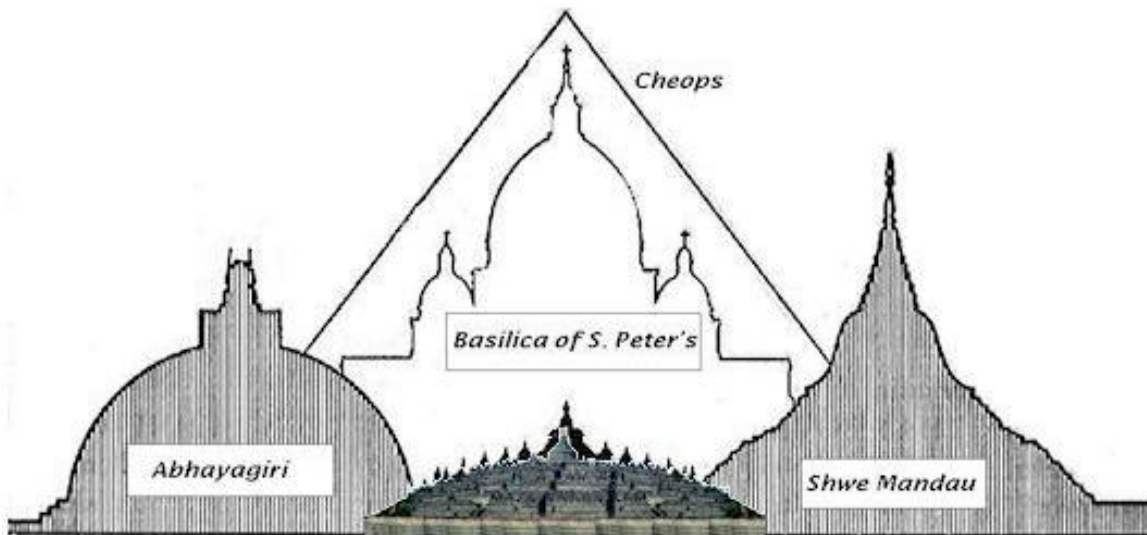
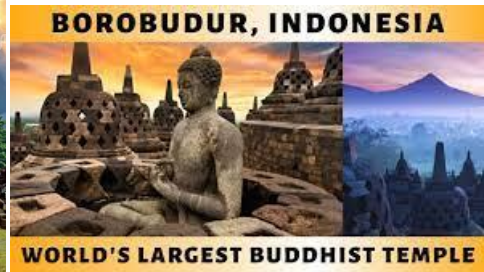
2. Scientific-Borobudur



Part mix of rupadhatu-carving of king-residing in castle flanked-warriors-minister



Borobudur as an UFO Pic to RIGHT Spaceship from the movie ALIEN by Ridley Scott



Size of Borobudur. It is so immense that some like Fahmi Basya have likened it a UFO

4. The Temple Mountain of My Son (Vietnam: 4th to 14th centuries C.E.) and Hoa Lai: My Son site was constructed between the 4th and the 14th centuries by the Kings of Champa. The temples were built by brick and sandstone materials, and were dedicated to Hinduism, to worship the god Shiva. My Son site records and uses of sanskrit as well as architectural formulas demonstrate some similarity between some of Phnom Kulen temples (Damrei Krap, Khting Slap). Hoa Lai cham temple illustrates some similarity with Damrei Krap with its architecture and brick decoration. On a regional scale, iconography and decoration motives have been shared in all South-East Asia and similarities can be found in other historical complexes in Southeast Asia, such as Borobudur in Java, Angkor Wat in Cambodia, and Bagan in Myanmar. For more details see my paper on the *Comparison between the Angkor wat and the Prambhanan Temple* on academia.edu and researchgate.net.

5. Regional-Sahasralinga or 1000 lingas on the Shalmala river (India: 17th century C.E.): The River Shalmala is located in the town of Sirsi, which is known for its Shiva linga carved on the rocks, along the banks and in the riverbed of the Shalmala River, in the Karnataka state, India. This decorated river with Linga is similar to the one found in Cambodia, and represented by only two sites, both located in Phnom Kulen National Park. One is Kbal Spean, located on the western range, the other on the Phnom Kulen plateau, the One thousand Linga.

During angkorian period, the river was identified with Ganga, the sacred river of India, and by association, Phnom Kulen itself must have been associated with the mythic Himalayan mountains of Meru and Kailasa in India. Thus, both sites were a very holy place and it remains an important site of worship and pilgrimage until recently. This comparison emphasizes significant features with India of which are similar the form, believe, and sculptures. However, they do not have water management function rather a symbolic one.



6. The Khajuraho (India:950 to 1050 C.E.): The Khajuraho is a group of Hindu temples and Jain temples in Chhatarpur district, Madhya Pradesh, India. Khajuraho temples were built of sandstone on a granite foundation and dedicated to Hinduism and Jainism. Khajuraho temples was entirely inspired

by the Hindu temple design, following a grid of geometrical design called vastu-purusha-mandala. The Khajuraho temples are not constructed as step pyramids like Rong Chen on Phnom Kulen, Bakong, Phnom Bakeng, and Prasat Thom at Koh Ker temple. However, some Khajuraho temples were built and dedicated to Hindu gods as in Rong Chen on Phnom Kulen and other temples of Angkor region.



7. Kaifeng City (China: 10th century C.E.): Kaifeng City is constructed many canals to link a local river to the yellow river, in east-central Henan province, China. It is best known for being the Chinese capital in the Northern Song dynasty. Indeed, the new technology of hydraulic power was used to turn the water wheel and a water clock. Kaifeng City is surrounded by three rings of city walls. Kaifeng was transformed into a major commercial hub when it was connected to the grand canal as well as through the construction of a canal running to western Shandong, in the early 7th century. Mahendraparvata on Phnom Kulen is also a capital city in Cambodia that setups a water management resource system by establishment large reservoir and smaller water ponds, dams, and dyke on the hilltop of Kulen mountain.



8. International Machu Picchu (Peru: 15th century C.E.): Machu Picchu is an ancient city on the hilltop located in Machu Picchu district, Southern Peru. Most archaeologists believe that Machu Picchu was contracted for the Inca emperor Pachuti (1438-1472). Machu Picchu was built in the classical Inca style with polished dry-stone walls. There are three primary structures such as the temple of the sun, the room of the three windows and the ritual associated with the calendar. Furthermore, Machu Picchu was a UNESCO World Heritage

Site in 1983 and it was voted one of the “New Seven Wonders of the world” in 2007. Machu Picchu considered being a royal city for kingship, similar with Mahendraparvata on Phnom Kulen. However, it was used for 80 years before being abandoned and it was similar used of Mahendraparvata/Phnom Kulen. There are more similarities with Cambodia with a royal palace and settlements on the hilltop of the mountain. Machu Picchu was used the farming done on its hundreds of man-made terraces. They built to ensure good drainage and soil fertility while also protecting the mountain itself from erosion and landslides. On the other hand, it is different from Phnom Kulen, the farming done on the hilltop.



9. Chichen Itza (Mexico: 7th-13th centuries C.E.): Chichen Itza presents a multitude of architectural styles of the Northern Maya lowlands. Chichen Itza is the largest Maya city and shows densely architecture and residential architecture at the site. This site demonstrates a natural sink holes with water and some attractive of settlement sites. The town planning of Chichen Itza with the relatively densely clustered architecture of the site is at least 5 square kilometers. Some greatest effort was put for the levelling of the landscape to build the Kukulcan pyramid, grand Ballcourt, temple of warriors and El Caracol. The kukulcan temple at Chichen Itza was built as a stepped pyramid and serves to showcase an ancient light show during every equinox of the Maya.

It is therefore not surprising that the TEMPLES that were built should resemble Mountains and the titles that the Kings took should be on the verge of Blasphamy (In Hinduism). There was no concrete understanding of Hinduism in Cambodia during the Khemer Era and though there was knowledge brought there by Brhamin priests who taught and advised the Kings, a frivolous understanding of Hinduism prompted a makeover to CAMBODIAN HINDUISM that embraced animistic ideas about Mountains and Kings proclaimed themselves as Kings of Hindu Gods. Thqis is proven by the fact that overnight the empire started following Buddhism from Hinduism as if “changing a shirt “.

CHAPTER III

Angkor Wat as a Temple Mountain



Angkor Wat is the largest religious monument on the planet. Angkor Wat is spread across over 400 acres / 1.6 km², and is said to be the largest religious monument in the world. It was listed as a UNESCO World Heritage Site in 1992, which encouraged an international effort to save the complex.

The temple mountain form was meant to represent Mount Meru. ... Angkor Wat is a Hindu temple complex at Angkor, Cambodia, built for the king Suryavarman II in the early 12th century as his state temple and part of his capital city. (The Angkorian period dates 802-1432). Angkor Wat combines two basic plans of Khmer temple architecture: the temple-mountain and the later galleried temple. It is designed to represent Mount Meru, home of the devas in Hindu and Buddhist cosmology. ... The temple is at the top of the high classical style of Khmer architecture.

What makes Angkor Wat special?: Though just one of hundreds of surviving temples and structures, the massive Angkor Wat is the most famed of all Cambodia's temples—it appears on the nation's flag—and it is revered for good reason. The 12th century “temple-mountain” was built as a spiritual home for the Hindu god Vishnu

What does the Angkor Wat temple represent?



All of the original religious motifs derived from Hinduism, and the temple was dedicated to the gods Shiva, Brahma, and Vishnu. The five central towers of Angkor Wat symbolize the peaks of Mount Meru, which according to Hindu mythology is the dwelling place of the gods.

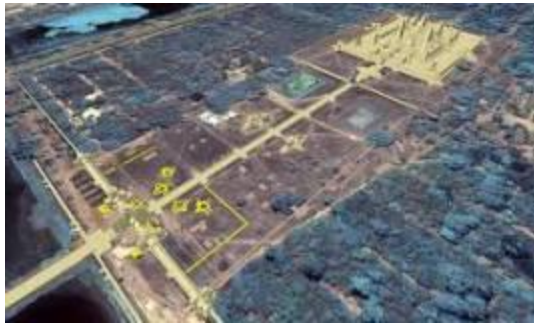


King Suryavarman II

Angkor Wat is an architectural masterpiece and the largest religious monument in the world – covering an area four times the size of Vatican City. It was built by the Khmer King Suryavarman II in the first half of the 12th century, around the year 1110-1150, making Angkor Wat almost 900 years old.

50 Angkor Temples

Angkor Wat is the most famous of more than 50 Angkor Temples within the Angkor Archaeological Park and Siem Reap Province. The area is over 400 square kilometres (155 square miles) of hot and humid jungle. It fulfills the criterion of both a temple mountain and is like a Jain temple city.



Sprawling structures forming the shape of a giant spiral and an ensemble of buried towers have been dug up from the grounds of Angkor Wat, spurring new mysteries about the ancient temple. It was once believed that the Cambodian temple was surrounded sacred precincts, or 'temple cities. '

Why is Angkor Wat important to Hinduism?

All of the original religious motifs derived from Hinduism, and the temple was dedicated to the gods Shiva, Brahma, and Vishnu. The five central towers of Angkor Wat symbolize the peaks of Mount Meru, which according to Hindu mythology is the dwelling place of the gods.

Angkor Wat occupies a rectangular area of about 208 hectares (500 acres) defined by a laetrile wall. The first evidence of the site is a moat with a long sandstone causeway (length 250 meters, 820 feet; width 12 meters, 39 feet) crossing it and serving as the main access to the monument-



about 500 acres

Built between roughly A.D. 1113 and 1150, and encompassing an area of about 500 acres (200 hectares), Angkor Wat is one of the largest religious monuments ever constructed.

Is Angkor Wat bigger than the pyramids? Angkor Wat is the biggest religious complex on the planet. The complex's main temple, Angkor Wat puts Vatican City to shame (sorry Pope Francis) – it's four times the size! Plus, the entire city of Angkor used more stone than all the Egyptian pyramids combined, and took over an area larger than modern-day Paris. Angkor Wat 'temple city / city of temples', located in northwest Cambodia, is the largest religious structure in the form of a temple complex in the world by land area measuring 162.6 hectares (401+¾ acres). At the centre of the temple stands a quincunx of four towers surrounding a central spire that rises to a height of 65 m (213 ft) above the ground. The temple has three rectangular galleries, each raised above the next. It lies within an outer wall 3.6 kilometres (2+¼ miles) long and a moat more than five kilometres (three miles) long. Outer enclosure



A view of the gates and west wall of the outer enclosure of Angkor Wat from across the moat/ The Northern library//Ta Reach Statue at Angkor Wat, an Eight-Armed Vishnu.

The monument was made out of five to ten million sandstone blocks with a maximum weight of 1.5 tons each. The entire city of Angkor used far greater amounts of stone than all the Egyptian pyramids combined, and occupied an area significantly greater than modern-day Paris. Moreover, unlike the Egyptian pyramids which use limestone quarried barely 0.5 km (¼ mi) away all the time, the entire city of Angkor was built with sandstone quarried 40 km (25 mi) (or more) away. This sandstone had to be transported from Mount Kulen, a quarry approximately 40 kilometres (25 mi) northeast.

The route has been suggested to span 35 kilometres (22 mi) along a canal towards Tonlé Sap lake, another 35 kilometres (22 mi) crossing the lake, and finally 15 kilometres (9 mi) against the current along Siem Reap River, making a total journey of 90 kilometres (55 mi). However, Etsuo Uchida and Ichita Shimoda of Waseda University in Tokyo, Japan have discovered in 2011 a shorter 35-kilometre (22 mi) canal connecting Mount Kulen and Angkor Wat using satellite imagery. The two believe that the Khmer used this route instead.

Virtually all of its surfaces, columns, lintels, and even roofs are carved. There are kilometres of reliefs illustrating scenes from Indian literature including unicorns,

griffins, winged dragons pulling chariots as well as warriors following an elephant-mounted leader and celestial dancing girls with elaborate hairstyles. The gallery wall alone is decorated with almost 1,000 m² (11,000 sq ft) of bas reliefs. Holes on some of the Angkor walls indicate that they may have been decorated with bronze sheets. These were highly prized in ancient times and were a prime target for robbers.

Labour force: When a stonemason and sculptor, recreated a stone sculpture under 1.2 metres (4 ft), this took about 60 days to carve. Experiments to quarry limestone took 12 quarrymen 22 days to quarry about 400 tons of stone. The labour force to quarry, transport, carve and install so much sandstone must have run into the thousands including many highly skilled artisans. The skills required to carve these sculptures were developed hundreds of years earlier, as demonstrated by some artefacts that have been dated to the seventh century, before the Khmer came to power.

The outer wall, 1,024 m (3,360 ft) by 802 m (2,631 ft) and 4.5 m (15 ft) high, is surrounded by a 30 m (98 ft) apron of open ground and a moat 190 m (620 ft) wide and over 5 kilometres (3 mi) in perimeter. The moat extends 1.5 kilometres from east to west and 1.3 kilometres from north to south. Access to the temple is by an earth bank to the east and a sandstone causeway to the west; the latter, the main entrance, is a later addition, possibly replacing a wooden bridge.

There are gopuras at each of the cardinal points; the western is by far the largest and has three ruined towers. Glaize notes that this gopura both hides and echoes the form of the temple proper. The outer wall encloses a space of 820,000 square metres (203 acres), which besides the temple proper was originally occupied by the city and, to the north of the temple, the royal palace. Like all secular buildings of Angkor, these were built of perishable materials rather than of stone, so nothing remains of them except the outlines of some of the streets. Most of the area is now covered by forest. A 350 m (1,150 ft) causeway connects the western gopura to the temple proper, with naga balustrades and six sets of steps leading down to the city on either side. Each side also features a library with entrances at each cardinal point, in front of the third set of stairs from the entrance, and a pond between the library and the temple itself. The ponds are later additions to the design, as is the cruciform terrace guarded by lions connecting the causeway to the central structure. Beyond, the second and inner galleries are connected to each other and to two flanking libraries by another cruciform terrace, again a later addition. From the second level upwards, devatas abound on the walls, singly or in groups of up to four. The second-level enclosure is 100 m (330 ft) by 115 m (377 ft), and may originally have been flooded to represent the ocean around Mount Meru. Three sets of steps on each side lead up to the corner towers and gopuras of the inner gallery. The very steep stairways represent the difficulty of ascending to the kingdom of the gods. This inner gallery, called the *Bakan*, is a 60 m (200 ft) square with axial galleries connecting each gopura with the central shrine, and subsidiary shrines located below the corner towers.

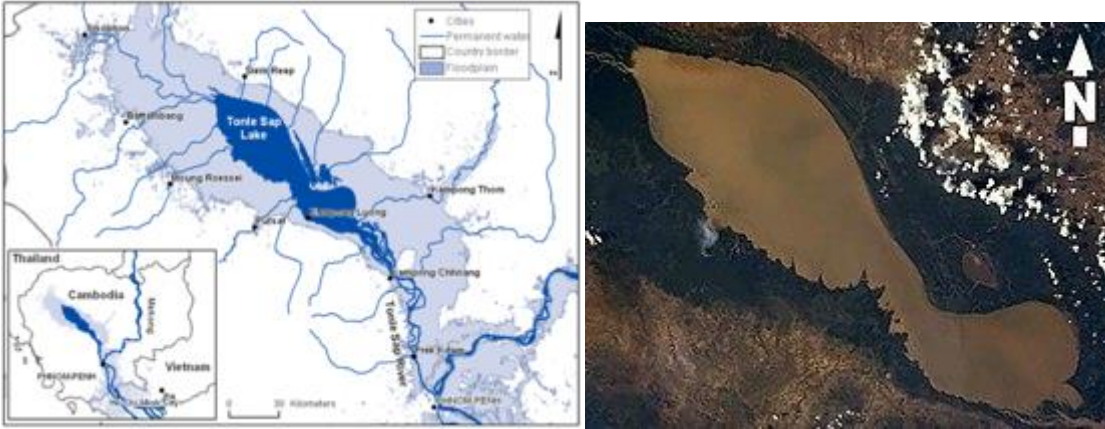
The roofings of the galleries are decorated with the motif of the body of a snake ending in the heads of lions or garudas. Carved lintels and pediments decorate the entrances to the galleries and to the shrines. The tower above the central shrine rises 43 m (141 ft) to a height of 65 m (213 ft) above the ground; unlike those of previous temple mountains, the central tower is raised above the surrounding four. The shrine itself, originally occupied by a statue of Vishnu and open on each side, was walled in when the temple was converted to Theravada Buddhism, the new walls featuring standing Buddhas. The monument was made out of five to ten million sandstone blocks with a maximum weight of 1.5 tons each.^[70] The entire city of Angkor used far greater amounts of stone than all the Egyptian pyramids combined, and occupied an area significantly greater than modern-day Paris. Moreover, unlike the Egyptian pyramids which use limestone quarried barely 0.5 km (¼ mi) away all the time, the entire city of Angkor was built with sandstone quarried 40 km (25 mi) (or more) away. This sandstone had to be transported from Mount Kulen, a quarry approximately 40 kilometres (25 mi) northeast.

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Devata Sculpture on Wall at Angkor Wat/ The Tonel Sap River

Virtually all of its surfaces, columns, lintels, and even roofs are carved. There are kilometres of reliefs illustrating scenes from Indian literature including unicorns, griffins, winged dragons pulling chariots as well as warriors following an elephant-mounted leader and celestial dancing girls with elaborate hairstyles. The gallery wall alone is decorated with almost 1,000 m² (11,000 sq ft) of bas reliefs. Holes on some of the Angkor walls indicate that they may have been decorated with bronze sheets. These were highly prized in ancient times and were a prime target for robbers.¹



Temple Mountain: Angkor Wat combines two basic plans of Khmer temple architecture: the temple mountain and the later galleried temple, based on early South Indian Hindu architecture. It is designed to represent Mount Meru, home of the devas in Hindu mythology: within a moat and an outer wall 3.6 kilometres (2.2 mi) long are three rectangular galleries, each raised above the next. At the centre of the temple stands a quincunx of towers. Unlike most Angkorian temples, Angkor Wat is oriented to the west. A UNESCO World Heritage Site.

An aerial view of Angkor Wat demonstrates that the temple is made up of an expansive enclosure wall, which separates the sacred temple grounds from the protective moat that surrounds the entire complex (the moat is visible in the photograph at the top of the page). The temple proper is comprised of three galleries (a passageway running along the length of the temple) with a central sanctuary, marked by five stone towers.

The five stone towers are intended to mimic the five mountain ranges of Mt. Meru—the mythical home of the gods, for both Hindus and Buddhists. The temple mountain as an architectural design was invented in Southeast Asia. Southeast Asian architects quite literally envisioned temples dedicated to Hindu gods on earth as a representation of Mt. Meru. The galleries and the empty spaces that they created between one another and the moat are envisioned as the mountain ranges and oceans that surround Mt. Meru. Mt. Meru is not only home to the gods, it is also considered an axis-mundi. An axis-mundi is a cosmic or world axis that connects heaven and earth. In designing Angkor Wat in this way, King Suryavarman II and his architects intended for the temple to serve as the supreme abode for Vishnu. Similarly, the symbolism of

Angkor Wat serving as an axis mundi was intended to demonstrate the Angkor Kingdom's and the king's central place in the universe. In addition to envisioning Angkor Wat as Mt. Meru on earth, the temple's architects, of whom we know nothing, also ingeniously designed the temple so that embedded in the temple's construction is a map of the cosmos (mandala) as well as a historical record of the temple's patron.

Angkor Wat as a Mandala

According to ancient Sanskrit and Khmer texts, religious monuments and specifically temples must be organized in such a way that they are in harmony with the universe, meaning that the temple should be planned according to the rising sun and moon, in addition to symbolizing the recurrent time sequences of the days, months and years.

The central axis of these temples should also be aligned with the planets, thus connecting the structure to the cosmos so that temples become spiritual, political, cosmological, astronomical and geo-physical centers. They are, in other words, intended to represent microcosms of the universe and are organized as mandalas—diagrams of the universe.

In their article - Angkor Wat: An introduction, Roland Fletcher, Damian Evans, Christophe Pottier, Chhay Rachna, 2015,



(https://www.researchgate.net/publication/286412358_Angkor_Wat_An_introduction) They state that:

“The temple of Angkor Wat, visited annually by tens of thousands of tourists, is without question one of the great archaeological sites of mainland Southeast Asia.





Less obvious to the casual visitor is that it was but a single element in a large dispersed city. The papers in this special section demonstrate how recent research using LiDAR, ground-penetrating radar and targeted excavation have transformed our understanding of Angkor Wat and its surroundings.”




It is actually a stepped PYRAMID and this is discussed on a later chapter.


Current largest Hindu temples





	Name	Area (m ²)	Country	Notes
1	Angkor Wat	1,626,000	 Cambodia	Angkor Wat is a temple complex at Angkor, Cambodia. It is the largest religious monument in the world, on a site measuring 162.6 hectares (1,626,000 m ² ; 402 acres) which was built by a Khmer king Suryavarman II in the early 12th century as his state temple and capital city. As the best-preserved temple at the site, it is the only one to have remained a significant religious center since its foundation — first Hindu, dedicated to the god Shri Vishnu, then Buddha.
2	Swaminarayan Akshardham (North America)	660,000	 United States	The BAPS Shri Swaminarayan Mandir in Robbinsville in Central New Jersey is a Hindu place of worship built by the BAPS Swaminarayan Sanstha and consecrated by Pramukh Swami Maharaj. The BAPS Swaminarayan Sanstha, led by Mahant Swami Maharaj, is a denomination of the Swaminarayan branch of Hinduism. The mandir is built of hand-carved Italian Carrara marble, Turkish limestone, and Indian pink stone. The mandir was constructed according to guidelines outlined in ancient Vedas, or Hindu scriptures. ^[5]

	Name	Area (m ²)	Country	Notes
3	Sri Ranganatha svamy Temple	631,000	 India	The Srirangam Temple is often listed as the largest functioning Hindu temple in the world. The temple, located in Tamil Nadu, occupies an area of 156 acres (631,000 m ²) with a perimeter of 4,116m (10,710 feet), making it the largest temple in India and one of the largest religious complexes in the world. The temple is enclosed by seven concentric walls (termed <i>prakarams</i> (outer courtyard) or <i>mathil suvar</i>) with a total length of 32,592 feet or over six miles. These walls are enclosed by 21 Gopurams. The Ranganathanswamy Temple complex with 49 shrines, all dedicated to Lord Vishnu, is so huge that it is like a city within itself. However, the entire temple is not used for the religious purpose, the first three out of seven concentric walls are used by private commercial establishments such as restaurants, hotels, flower market, and residential homes. ^[7] Taking this detail into account, still the temple ranks third to in the list of large Hindu temples after Thillai Nataraja Temple, Chidambaram and Tiruvannamalai Annamalaiyar Temple. The temple was awarded with UNESCO Asia Pacific Award for Cultural Heritage Conservation Program in the year 2017 for the category "Award of Merit".
4	Chhatarpur Temple	280,000	 India	The Chhatarpur Temple was established in 1974, by Baba Sant Nagpal ji, who died in 1998. His samadhi shrine lies in the premises of the Shiv-Gauri Nageshwar Mandir within the temple complex. ^[9] This temple was considered as the biggest temple in India and second largest in the world, before the Akshardham Temple was created in 2005 in Delhi. This temple is totally constructed from marble and on all the facets there is <i>jaali</i> (perforated stone or latticed screen) work. It can be classified a vesara style of architecture.
5	Akshardham	240,000	 India	Akshardham is a Hindu temple complex in Delhi, India. ^[10] Also referred to as <i>Delhi Akshardham</i> or <i>Swaminarayan Akshardham</i> , the complex displays millennia of traditional Indian and Hindu culture, spirituality, and architecture. The building was inspired and moderated by Pramukh Swami Maharaj, the spiritual head of the Bochasanwasi Shri Akshar Purushottam



	Name	Area (m ²)	Country	Notes
				Swaminarayan Sanstha, whose 3,000 volunteers helped 7,000 artisans construct Akshardham.
6	Besakih Temple	200,000 ^{1]} ^{2]}	 Indonesia	The Besakih Temple is a <i>pura</i> complex in the village of Besakih on the slopes of Mount Agung in eastern Bali, Indonesia. It is the most important, the largest and holiest temple of Hindu religion in Bali, and one of a series of Balinese temples. Perched nearly 1000 meters up the side of Gunung Agung, it is an extensive complex of 23 separate but related temples with the largest and most important being Pura Penataran Agung. The temple is built on six levels, terraced up the slope. The entrance is marked by a <i>candi bentar</i> (split gateway), and beyond it the Kori Agung is the gateway to the second courtyard.
7	Belur Math, Ramakrishna temple	160,000	 India	<i>Belūr Maṭh</i> or Belur Mutt is the headquarters of the Ramakrishna Math and Mission, founded by Swami Vivekananda, a chief disciple of Ramakrishna Paramahansa. It is located on the west bank of Hooghly River, Belur, West Bengal, India and is one of the significant institutions in Calcutta. This temple is the heart of the Ramakrishna Movement. The temple is notable for its architecture that fuses Hindu, Christian and Islamic motifs as a symbol of unity of all religions.
8	Thillai Nataraja Temple, Chidambaram	160,000	 India	Thillai Natarajah Temple, Chidambaram – The Chidambaram Thillai Natarajar-Koothan Kovil, or Chidambaram Temple, is a Hindu temple dedicated to Lord Shiva located in the centre of the temple town of Chidambaram, Tamil Nadu in east-central South India. Chidambaram is a temple complex spread over 40 acres (160,000 m ²) in the heart of the city. It is truly a large temple which is completely used for religious purpose. The main complex to Lord Shiva Nataraja also contains shrines to deities such as Sivakami Amman, Ganesh, Murugan and Vishnu in the form Govindaraja Perumal.
9	Prambanan, Trimurti	152,000		Candi Prambanan or Candi Rara Jonggrang is a 9th-century Hindu temple compound in Central




	Name	Area (m ²)	Country	Notes
	temple		Indonesia	<p>Java, Indonesia, dedicated to Shiva. It also houses shrines of Vishnu, Brahma and their consorts. The temple compound is located approximately 17 kilometres (11 mi) northeast of the city of Yogyakarta on the boundary between Central Java and Yogyakarta provinces.</p> <p>The temple compound, a UNESCO World Heritage Site, is the largest Hindu temple site in Indonesia, and one of the biggest in Southeast Asia. It is characterized by its tall and pointed architecture, typical of Hindu temple architecture, and by the towering 47-metre-high (154 ft) central building (Lord Shiva shrine) inside a large complex of individual temples.^[17] Prambanan attracts many visitors from across the world.</p>
10	Brihadeeswarar Temple	102,400	 India	<p>The Brihadeeswarar Temple, also called the Big Temple, was built by Raja Raja Chola I in 1010 CE and is dedicated to Shiva. The Big Temple is not only a magnificent edifice with its majestic vimana, sculptures, architecture and frescoes but also has a wealth and richness of Tamil inscriptions engraved on stone in superb calligraphy. The temple is part of the UNESCO World Heritage Site. One wonders how such a big temple could be built in the flat for 6 years taking into account the amount of stone and soil to be moved and the lack of powered machinery available in those days. The massive sized main Vimanam (Tower) is 216 feet high. The Vimanam has 16 elaborately articulated stores and dominates the main quadrangle. It has a monolithic Nandhi weighing about 25 tonnes and is about 12 feet high and 20 feet long. The presiding deity of the lingam is 12 feet tall.</p>
11	Annamalaiyar Temple	101,171	 India	<p>The Annamalaiyar Temple is a noted Hindu temple dedicated to Lord Shiva, and it is the second largest temple (by the area used completely for religious purpose). It has got four stately towers on all the four sides and four high stone walls just like the rampart walls of a fort. The 11-tiered highest (217 feet (66 m)) Eastern Tower is called the <i>Rajagopuram</i>. The fortified walls pierced with four <i>gopura</i> entrances offer a formidable look to this vast complex.</p>
12	Dakshineswar Kali Temple	101,171	 India	<p>The Dakshineswar Kali Temple is situated on the eastern bank of the Hooghly River (a distributary of the Ganga River) in suburban Kolkata. The presiding deity of the temple is Bhavatarini, an aspect of Goddess Kali, meaning, 'She who liberates</p>

	Name	Area (m ²)	Country	Notes
				Her devotees from the ocean of existence i.e. Saṃsāra'. The temple was built in 1855 by Rani Rashmoni, a philanthropist and a devotee of Kali. ^{[22][23]} The temple complex is spread over 25 acres (101,171 m ²) and is one of the largest temples in Bengal.
13	Rajagopalaswamy temple	93,000	 India	The Rajagopalaswamy Temple is a Vaishnavite shrine located in the town of Mannargudi, Tamil Nadu, India. The Front Temple tower is 156 feet tall. The presiding deity is Rajagopalaswamy, a form of Lord Krishna. The temple is spread over an area of 23 acres (93,000 m ²) and The temple tank is called Haridra Nadhi, 1,158 feet long and 837 feet broad 23 acres (93,000 m ²) is one of the important Vaishnavite shrines in India. The temple is called Dakshina Dwarka (Southern Dwarka) along with Guruvayoor by Hindus. The temple is also 23 acres and the Temple tank Haridra Nadhi is also 23 acres making it one of the largest temple tanks in India
14	Ekambareswarar Temple	92,860	 India	The Ekambareswarar Temple is a Hindu temple dedicated to Lord Shiva, located in Kanchipuram in the state of India. It is one of the five major Shiva temples or <i>Pancha Bootha Sthalams</i> (each representing a natural element) representing the element Earth.
15	Thrissur Vadakkunnathan Temple	81,000 ^[25]	 India	The Vadakkumnathan Temple is an ancient Hindu temple dedicated to Shiva at city of Thrissur, of Kerala state in India. The Thekkinkadu Maidan is 65-acre (260,000 m ²) in area where Vadakkunnathan Temple is located.
16	Varadharaja Perumal Temple	81,000	 India	The Varadharaja Perumal Temple is dedicated to Lord Vishnu located in the holy city of Kanchipuram, Tamil Nadu, India. It is one of the Divya Desams, the 108 temples of Vishnu believed to have been visited by the 12 poet saints, or Alvars. ^[28] It is located in a suburb of Kanchipuram known as the Vishnu Kanchi that is a home for many famous Lord Shri Vishnu temples. One of the greatest Hindu scholars of Vaishnava VisishtAdvaita philosophy, Ramanuja is believed to have resided in this temple.
17	Thyagaraja Temple	80,937	 India	The ancient Sri Thyagaraja Temple at Tiruvarur is dedicated to the Somaskanda aspect of Shiva. The temple complex has shrines dedicated to Vanmikanathar, Tyagarajar and the Kamalaamba, and covers an area of over 20 acres (81,000 m ²) The Kamalalayam temple tank covers around 16 acres (65,000 m ²), one of the largest in the country.

	Name	Area (m ²)	Country	Notes
				The temple chariot is the largest of its kind in Tamil Nadu.
18	BAPS Shri Swaminarayan Mandir Toronto	72,843	 Canada	The BAPS Shri Swaminarayan Mandir in Etobicoke, Toronto, Ontario, Canada is a traditional Hindu place of worship that was built by the BAPS Swaminarayan Sanstha. The BAPS Swaminarayan Sanstha, which is headed by Mahant Swami Maharaj, is a global spiritual organization within the Swaminarayan branch of Hinduism. The mandir was built in 18 months and consists of 24,000 pieces of hand-carved Italian carrara marble, Turkish limestone and Indian pink stone. ^[31] The mandir is the largest of its kind in Canada and was constructed according to guidelines outlined in ancient Hindu scriptures. ^[32] The grounds spread over 18 acres and in addition to the mandir, include a haveli and the Heritage Museum.
19	Jambukeswarar Temple, Thiruvanaikaval	72,843	 India	Thiruvanaikaval (also Thiruvanaikal) is a Shiva temple in Tiruchirapalli, in the state of India. The temple was built by Kocengannan (Kochenga Chola), one of the Early Cholas, around 1,800 years ago. ^l
20	Nellaiappar Temple	71,000	 India	The Nellaiappar Temple, dedicated to Shiva, was built 2500–3000 years ago. The river Tamirabharani referred to by poets as "Porunai" flows round the city. One of the famous temples in India steeped in tradition and history and also known for its musical pillars and other brilliant sculptural splendor. The temples were built by Muluthukanda Rama Pandiyan. The musical pillars in the Mani Mandapam which produce sound in various pitches when struck, the Somavara Mandapam, the 1000 pillared hall, and the Tamra sabha with intricate wood work, and the Vasantha Mandapam are some of the noteworthy points in this temple. The temple car belongs to this temple is the third largest temple car in India and it is more than 510 years ago and it is the oldest car festival in the world.
21	Meenakshi Amman Temple	70,050	 India	The Meenakshi Sundareswarar Temple, or Meenakshi Amman Temple, is dedicated to Lord Shiva — who is known here as <i>Sundareswarar</i> or <i>Beautiful Lord</i> — and his consort, Parvati who is known as <i>Meenakshi</i> . The temple forms the heart and lifeline of the 2500-year-old city of Madurai. The complex houses 14 magnificent <i>Gopurams</i> or towers including two golden <i>Gopurams</i> for the main deities, that are elaborately sculptured and painted.

	Name	Area (m ²)	Country	Notes
22	Batu Caves	65,000 ^[35]	 Malaysia	Rising almost 100 m above the ground, the Batu Caves temple complex consists of three main caves and a few smaller ones. The biggest, referred to as Cathedral Cave or Temple Cave, has a very high ceiling and features ornate Hindu shrines. To reach it, visitors must climb a steep flight of 272 steps. At the base of the hill are two more cave temples, Art Gallery Cave and Museum Cave, both of which are full of Hindu statues and paintings. This complex was renovated and opened as the Cave Villa in 2008. Many of the shrines relate the story of Lord Murugan's victory over the demon Soorapadman. An audio tour is available to visitors. A 42.7-metre (140 ft) high statue of Lord Murugan was unveiled in January 2006, having taken 3 years to construct.
23	Shri Shiva Vishnu Temple, Victoria	61,000	 Australia	The Shri Shiva Vishnu Hindu Temple is located in this suburb. This temple is the largest Hindu temple in Victoria. Worship at the temple is centred around Lord Shiva and Lord Vishnu, the presiding deities of two dominant streams in the Hindu ritualistic tradition. The temple attempts to bring the two streams together and provide a synthesis. Many Hindus residing in Melbourne worship there and is most popularly known for holding the annual Hindu festivals of Holi and Diwali. ^[36]
24	Vaitheeswaran Koil	60,780	 India	The Vaitheeswaran Temple is located in India, dedicated to the god Shiva. In this temple, Lord Shiva is worshiped as "Vaitheeswaran" or the "God of medicine"; worshipers believe that prayers to Lord Vaitheeswaran can cure diseases.
25	Maheswarnath Mandir	41,000	 Mauritius	Maheswarnath Mandir (locally known as "grand shivala Triolet") is a Hindu temple located in the town of Triolet, Mauritius. The presiding deity of the temple is Lord Shiva (one of his epithets is Maheshwarnath, meaning the <i>great Lord</i>). The temple was founded in 1888 by Pandit Shri Sajeebunlall Ramsoondur, who came from Calcutta. The temple is famous for its association with the first pilgrimage to Ganga Talao, the sacred lake found in the center of Mauritius. The temple is the biggest and one of the oldest temples on the island.
26	Jagannath Temple, Puri	37,000	 India	The Jagannath Temple in Puri is a famous Hindu temple dedicated to Jagannath (Vishnu) in the coastal town of Puri in the state of Odisha, India. The name Jagannath (Lord of the Universe) is a combination of the Sanskrit words <i>Jagat</i> (Universe) and <i>Nath</i> (Lord of).
27	Birla	30,000	 India	The Laxminarayan Temple (also known as the Birla

	Name	Area (m ²)	Country	Notes
	Mandir			Mandir) is a Hindu temple dedicated to Laxminarayan in Delhi, India. The temple is built in honour of Lakshmi (Hindu goddess of wealth) and her consort Narayana (Vishnu, Preserver in the Trimurti). The temple was built in 1622 by Vir Singh Deo and renovated by Prithvi Singh in 1793. During 1933–39, Laxmi Narayan Temple was built by Baldeo Das Birla of Birla family. Thus, the temple is also known as Birla Mandir. Since then, funds for further renovations and support have come from the Birla family.
28	Shri Swaminarayan Mandir, Karachi	27,000	 Pakistan	The Shri Swaminarayan Mandir, in Karachi, is a Hindu temple that is the only Swaminarayan temple in Pakistan. ¹ The temple is notable for its size and frontage, over 32,306 square yards (27,012 m ²) on the M. A. Jinnah Road in Karachi city. The temple celebrated its anniversary of 150 years in April 2004. It is believed that not only Hindus but also adherents of Islam visit the temple, which adds to its notability. There is a sacred cowshed within the premises of this temple. The temple is located at the centre of a Hindu neighborhood in Karachi.
29	BAPS Shri Swaminarayan Mandir London	16,000	 United Kingdom	BAPS Shri Swaminarayan Mandir (also commonly known as the Neasden Temple) is a Hindu temple in Neasden, London, England. Built entirely using traditional methods and materials, the Swaminarayan mandir has been described as being Britain's first authentic Hindu temple. It was also Europe's first traditional Hindu stone temple, as distinct from converted secular buildings. It is a part of the Bochasanwasi Shri Akshar Purushottam Swaminarayan Sanstha (BAPS) organisation and was inaugurated in 1995 by Pramukh Swami Maharaj. The mandir (temple) was cited in <i>Guinness World Records 2000</i> as the largest Hindu temple outside India. However, since 2000 it has been surpassed in size by other BAPS mandirs elsewhere. The mandir was built and funded entirely by the Hindu community. The entire project spanned five years although the mandir construction itself was completed in two-and-a-half years. Building work began in August 1992. In November 1992, the temple recorded the largest concrete-pour in the UK, when 4,500 tons were put down in 24 hours to create a foundation mat 1.8 metres (5.9 ft) thick. The first stone was laid in June 1993; two years later, the building was complete.

	Name	Area (m ²)	Country	Notes
30	Dhakeshwari Temple	12,140	 Bangladesh	The Dhakeshwari National Temple is a Hindu temple in Dhaka, Bangladesh. It is state-owned, giving it the distinction of being Bangladesh's 'National Temple'. The name "Dhakeshwari" means so called "Goddess of Dhaka". Since the destruction of Ramna Kali Mandir in 1971 by the Pakistan Army during the Bangladesh Liberation War, the Dhakeshwari Temple has assumed status as the most important Hindu place of worship in Bangladesh. ^[45] It is also the largest Hindu temple in Bangladesh. This temple is part of the famous Shakti Peethas in Indian Subcontinent. Here the gem of sati's crown had fallen.
31	Ramna Kali Mandir	9,100	 Bangladesh	
32	Pashupatinath Temple	6,00	 Nepal	The Pashupatinath Temple is a famous and sacred Hindu temple complex that is located on the banks of the Bagmati River, approximately 5 km north-east of Kathmandu in the eastern part of Kathmandu Valley, ^[47] the capital of Nepal. The temple serves as the seat of Pashupatinath. This temple complex was inscribed on the UNESCO World Heritage Sites's list in 1979. ^{[48][49]} This "extensive Hindu temple precinct" is a "sprawling collection of temples, ashrams, images and inscriptions raised over the centuries along the banks of the sacred Bagmati river" and is included as one of the seven monument groups in UNESCO's designation of Kathmandu Valley as visit here

UNDER CONSTRUCTION TEMPLE MOUNTAINS

This is a dynamic list and may never be able to satisfy particular standards for completeness. You can help by adding missing items with reliable sources.

Planned area (m ²)	Capacity	Name	Completion	Comment
250,905	30,000	Vrindavan Chandrodaya Mandir	est. 2024	The Vrindavan Chandrodaya Mandir will be the tallest religious monument in the world once completed. At its potential cost of ₹300 crore (US\$42 million), it is likely to be one of the most expensive temples in the world.
809,371	20,000	Viraat	est. 2022	When completed, the Virat

Planned area (m ²)	Capacity	Name	Completion	Comment
		Ramayan Mandir		Ramayan Mandir will be the largest religious monument in the world. The Virat Ramayan Mandir will be almost double the height of the world-famous 12th century Angkor Wat temple complex in Cambodia.
490,000	100,000	Ram Mandir, Ayodhya	est. 2022	The Ayodhya Ram Temple is a Hindu temple that is being built at the pilgrimage site of Ram Janmabhoomi.
3,035,142	20,000	Sri Mayapur Chandrodaya Mandir		The Temple of the Vedic Planetarium, Mayapur will be a large Hindu temple which will function as a Hindu planetarium
110,000	–	BAPS Hindu Mandir Abu Dhabi	2022	The BAPS Hindu Mandir Abu Dhabi, upon completion, will be the first traditional Hindu stone mandir in the Middle East.
526,091	–	Carolina Murugan Temple	<i>Yet to be confirmed</i>	
6,968	1,500	Gurudarbar Sindhi Temple	est. 2022	

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CHAPTER IV

Temple Mountains of Cambodia and the Jain Hill temples of India



In many ancient religions, mountain tops—from the Greeks’ Mt. Olympus to the highest Himalayas of Hindu mythology were believed to be the privileged home of the gods. Southeast Asia, largely dependent on India for its principal religions of Hinduism and Buddhism, is no exception. On the island of Java in Indonesia, for example, the ancient holy site of Dieng was established in the crater of an extinct volcano. Its name in old Javanese, Di Hyang (in Sanskrit, Devalaya), means, in effect, “home of the Gods.”

In Cambodia, in the classic Khmer architecture of the Angkorean period, we find a temple type in which the sanctuary is built atop a stepped pyramid. Nineteenth century archaeologists called these “temple-mountains.” Each important sovereign was apparently obliged to build one in order to establish his power.

In the Indian religious context, a sanctuary functions primarily as the terrestrial dwelling place of the gods, the place from which they will be able to provide aid and prosperity to humankind. Many countries of Southeast Asia were under Indian influence; each resolved in its own way the problem of creating a divine residence in the world of human beings. Generally, architects and builders based the construction of their sanctuaries on strict religious texts (unfortunately, we have none from ancient Cambodia). To the rules prescribed by these texts were added numerous others relating to astronomy, geomancy, or numerology, the meanings of which are often lost today. Our lack of knowledge of almost everything that guided the creation of the sanctuaries makes it difficult to understand them and to explain their symbolism.

In Cambodia, however, the study of local ancient epigraphy has furnished a variety of insights into the symbolism of religious architecture. In the light of some of these inscriptions, we can make a connection between Mount Meru, the center and axis of the universe in Indian cosmography, and certain temple-mountains of Angkor, the ancient Khmer capital. These structures provide an image, a kind of representation of Mount Meru on a human scale. The best known example is the sanctuary built around A.D. 906 on the top of Phnom Bakheng, the precise center of Yasodharapura, Angkor’s first capital. In addition to being constructed on one of the rare hills (*phnom* in Khmer) of the region, the monument was conceived as a square pyramid with five levels. Locating the pyramid on a natural hill at the geometric center of the royal city

underlines the symbolic identification of the monument, center and axis of the city, with Mount Meru, center and axis of the universe.

In fact, the temple of Phnom Bakheng restates, with much greater complexity, the symbolic principles expressed earlier at the temple of the Bakong, founded in A.D. 881. At the Bakong, the summit of the five-level pyramid is occupied by a single sanctuary tower, whereas 5 towers arranged in a quincunx (a square of 4 towers with a fifth in the center) occupy the summit of Phnom Eakheng. Again, 12 temple annexes occupy the fourth level of the Eakong, but at Phnom Bakheng these 12 annexes appear on each of the five levels. Finally, only 8 large brick sanctuary towers are distributed at the foot of the Eakong, whereas 44 comparable towers ring the base of the Phnom Bakheng pyramid.

The temple-mountains of the Eakong and the Eakheng seem to suggest similar symbolic considerations in their main features, although those of the latter are more lavish. But the interpretation of the other temple-mountains at the Angkor site is different, at least in part. No temple-mountain of Angkor is truly comparable to another. Contrast the simplicity of the early temple of Baksei Chamkrong with the immense complexity of the Bayon. Eaksei Chamkrong was founded under the reign of Harsavarman I as the representation of Mount Kailasa, private domain of the god Siva; the Bayon was the state temple of Jayavarman VII in which secular symbolic Hindu principles and new Mahayana conceptions from the reign of the founding king were unified.

If there was any continuity in the function of the temple-mountain, it was above all as the seat of the protective divinity of the realm. In addition to personal prestige and the exaltation of his chosen divinity (usually the god Siva), each builder had in mind special concerns such as his ancestral cult or that of the royal person. His successors did not necessarily care about these concerns, at least not in the same way.

What we know about temple-mountains at the present time, therefore, seems to confound any attempt at analysis based on firm, well-established principles of continuity. It is better to regard each of these creations of Khmer architectural genius as the specific expression of changing religious principles at a particular period, in response to rules that were probably evolving from one reign to another. Angkor Wat as Temple Mountain



Angkor Wat. Siem Reap, Cambodia, 1116-1150 (photo: Peter Garnhum, CC BY-NC 2.0)

An aerial view of Angkor Wat demonstrates that the temple is made up of an expansive enclosure wall, which separates the sacred temple grounds from the protective moat that surrounds the entire complex (the moat is visible in the photograph at the top of the page). The temple proper is comprised of three galleries (a passageway running along the length of the temple) with a central sanctuary, marked by five stone towers.

The five stone towers are intended to mimic the five mountain ranges of Mt. Meru—the mythical home of the gods, for both Hindus and Buddhists. The temple mountain as an architectural design was invented in Southeast Asia. Southeast Asian architects quite literally envisioned temples dedicated to Hindu gods on earth as a representation of Mt. Meru. The galleries and the empty spaces that they created between one another and the moat are envisioned as the mountain ranges and oceans that surround Mt. Meru. Mt. Meru is not only home to the gods, it is also considered an axis-mundi. An axis-mundi is a cosmic or world axis that connects heaven and earth. In designing Angkor Wat in this way, King Suryavarman II and his architects intended for the temple to serve as the supreme abode for Vishnu. Similarly, the symbolism of Angkor Wat serving as an axis mundi was intended to demonstrate the Angkor Kingdom's and the king's central place in the universe. In addition to envisioning Angkor Wat as Mt. Meru on earth, the temple's architects, of whom we know nothing, also ingeniously designed the temple so that embedded in the temple's construction is a map of the cosmos (mandala) as well as a historical record of the temple's patron. Angkor Wat combines two basic plans of Khmer temple architecture: the temple-mountain and the later galleried temple. It is designed to represent Mount Meru, home of

the devas in Hindu mythology: within a moat more than 5 kilometres (3 mi) long and an outer wall 3.6 kilometres (2.2 mi) long are three rectangular galleries, each raised above the next. At the centre of the temple stands a quincunx of towers. Unlike most Angkorian temples, Angkor Wat is oriented to the west; scholars are divided as to the significance of this. The temple is admired for the grandeur and harmony of the architecture, its extensive bas-reliefs, and for the numerous devatas adorning its walls.

Angkor Wat as a Mandala

According to ancient Sanskrit and Khmer texts, religious monuments and specifically temples must be organized in such a way that they are in harmony with the universe, meaning that the temple should be planned according to the rising sun and moon, in addition to symbolizing the recurrent time sequences of the days, months and years. The central axis of these temples should also be aligned with the planets, thus connecting the structure to the cosmos so that temples become spiritual, political, cosmological, astronomical and geophysical centers. They are, in other words, intended to represent microcosms of the universe and are organized as mandalas—diagrams of the universe.

Hill temples in Jainism can be roughly ascribed to two types.

- 1. Those that were built on Hills in olden times*
- 2. Those are so huge that they have become like Hills.*

1st Category of ancient hill temples: A classic example of this is Palitana Hill temples or cluster temples. This has to be one of the most sacred places of worship for the Jain communities across the globe. Located on the Shatrunjaya Hills the Palitana cluster of temple comprises of a collection of 863 temples dedicated to the Jain gods. All these places of worship are immaculate and very opulent no matter what the size and the top can be reached after walking up around 3,000 steps from the foothills. The main temple on the top is dedicated to the St Tirthankara and the construction date of these sacred portals of religion can be dated back to 10th and is believed to have been completed over a time period of around 900 years. The currently standing structures have been renovated several times but the authenticity and spirituality here remain untouched.

Temple Architecture



The temples of Palitana display exquisite architecture and are heavily and very richly ornamented and adorned. The brilliance of the temple architecture lies in the fact that it has been constructed in such a unique way that the sunlight transforms the marble structures into some sort of an ivory shield. Out of the 863 temples the holiest one is the temple of Adishwar. This Tirth Sthal for Jains is primarily made out of marbles with tall and heavy pillars with a number of openings, kind of like a typical Hindu temple. The interiors are very intricately and finely carved complete with geometric lace designs, elaborately carved ceilings and clustered forms of canopies.

History

The hill holds a very special and pious place in the hearts of devout Jains. The sanctity of the Palitana temples lies in the fact that as per Shatrunjaya Mahatmya – the holy Jain texts – the 1st Tirthankara called Rishabh had delivered his very first sermon here and had successfully sanctified the hills. Later on his grandson, Pundarika is said to have attained his nirvana here in the Shatrunjaya hills (the first and initial name of the current Shatrunjaya hills were named Pundarikgiri. The hills are also said to have been visited several times by Bharata Chakravartin – the father of Pundarik and half-brother of Baahubali. A temple built by him dedicated to honour the life of his father Rishabh. If legends and mythological aspects are to be believed then a number

of other tirthankaras are also said to have paid a holy visit to these hills making it even more pious and sacred.

Shikharji Temple is one of the two holiest of all pilgrimage places by the Jain community, located on Parasnath range in Giridih district of Jharkhand. The mountain summit of Parasnath range is the most sacred to Jains. An ancient Jain temple on the Hill, *Shikharji* means the "venerable peak". The site is also called Sammed Śikhar or Sammet Shikhar "peak of concentration," because it is a place where twenty of twenty-four Tirthankaras attained Moksha through meditation. The word "Parasnath" is derived from Parshvanatha, the twenty-third Jain tirthankara, who was one of those who is believed to have attained Moksha at the site. Shikharji rises to 4,480 feet (1,370 m) making it the highest mountain in Jharkhand state. The earliest reference to Shikharji as a tirth (place of pilgrimage) is found in the *Jñāṭḍhārmakātha*, one of the twelve core texts of Jainism. Shikharji is also mentioned in the *Pārśvanāthacarita*, a twelfth century biography of Pārśva.

The popularity of Shikharji as a site of pilgrimage followed that of Vulture Peak, Bihar, where it is believed the Buddhist Sariputta attained enlightenment.

Jharkhand acquired Shikharji under the Bihar Land Reforms Act, leaving the rights of Jains in doubt. Use of Shikharji as a tourist destination also impacts on the religious beliefs of the Jain.

The temple at Shikharji is a new construction with some parts dating to the eighteenth century. However, the idol itself is very old. Sanskrit inscriptions at the foot of the image date to 1678. At the base of Shikharji is a temple to Bhomiyaji (Taleti). On the walls of the Jain temple at the village of Madhuban, there is a mural painting depicting all the temples on Parasnath Hill. Temples along the track include:

- Ganadhara
- Kunthunatha
- Rishabhanatha
- Chandraprabha
- Naminatha
- Aranatha
- Māllīnātha
- Vasupujya
- Abhinandananatha
- Ganadhara
- Jal Mandir
- Dharmanatha
- Vardhaman
- Varishen

- Shreyanasanatha
- Pushpadanta
- Padmaprabha
- Suvichran
- Chandraprabha
- Adinath
- Anantanatha
- Shitalanatha
- Sambhavanatha
- Sumatinatha
- Shantinatha
- Mahavira
- Suparshvanatha
- Vimalanatha
- Ajitanatha
- Neminatha
- Parshvanatha



Jain Hill caves at Keezh Kuyil Kudi and others carved out of hills.



An entrance to the cave. Photo: S. James

Cave Homes: In ancient times Jain Monks made Caves their homes for a variety of reasons the foremost being that they provided a natural, frugal living space with roof and four walls. The oldest major Tamil epics—Shilapadikaram, Manimeghalai and Civaka Chintamani—composed over 1,500 years ago are also Jain and speak of the city of Madurai and its rich merchants whose wealth made local kings nervous.

Unlike Buddhism, whose followers were expected to become monks, Jainism allowed its lay followers, the shravakas, to earn merit by taking care of monks. The Jain bas reliefs found in the caves at Keezh Kuyil Kudi tell a fascinating story. Keezh Kuyil Kudi, about 15 km from Madurai, is today called the Samanar or Jain hill. The setting could not have been be

lovelier, a large pond choked with lotus flowers, a huge old banyan tree and a temple for the village god, Karuppanasami.

A short walk around the massive stone hill leads to a flight of stairs that reaches a small cave. The steps are shaded by trees and it is a short, pleasant climb. The cave is ideal for playing hide-and-peek, because of little crevices and tunnels, and it's easy to miss the big attraction. There's a stunning bas relief of Mahavira with two attendants on one side and further inside, several others and a Yakshi, a spirit nymph in Jain mythology. Today, Yesakki and Petchi are common names in southern Tamil Nadu and both are modifications of this Sanskrit word – they have become Hindu names now but bear an ancient link to the country's Jain past.

The inscriptions here are from the 9th-10th centuries and mention the names and details of the donors for the bas reliefs. We learn from these of a great Jain school – Palli – that existed in nearby Kurandi. Gunasena Devar was an important teacher in that school and his students were instrumental in commissioning these bas reliefs. The longer climb of over 100 steps would have led us to a small spring with more bas reliefs and a stunning view of the city but would have been strenuous for a young child. Further up from the spring, recently a Brahmi inscription was discovered from the crevice in the rock, by a young student.

Beside the spring are several holes on the floor and a vertical rock face, indicative of pandals that were created with wooden poles and thatched roofs. These would have been places for the school that existed in the village. Inscriptions list more names of students who commissioned the bas reliefs. Close by, was once a stone temple of which only the foundation remains. It received a gift in ACE 889 during the reign of Veerananarayana Pandya from his queen Vanavan Mahadevi. One wonders who owns the land in the Konkarpuliyakunram village that the queen gave to this temple today! The oldest inscription on the hill records the creation of a stone bed by a native of nearby Thenur in 2nd century BCE, which however, requires a climb not for the faint hearted!

At the foothills is an Ayyanar temple. It has been heavily modernised, but if you look closely at two deities, fancifully called after mythical Pandya kings, you will find the heads of early pre-9th century Pandya sculptures of attendants, who would have formed part of the Jain temple that once stood on the hill. They have not been vandalised, but given stucco or concrete bodies and incorporated into the pantheon of deities inside the living temple, a good lesson for us on how to look after antiquities!

The presence of large boulders and rocky outcrops in the Pandya country must have no doubt attracted several Jain monks to the area and led to the widespread popularity of their religion. Public support for the monks

from all sections of society – farmers, traders and the kings -- was powerful since they offered food, medicine, education and sanctuary as their outreach to society. Perhaps the geography of the Chola country – devoid of such rocky outcrops suitable for caves, saw a greater acceptance of Buddhism rather than Jainism, which thanks to the seafaring nature of the Cholas was helped by taking the religion to the shores of South East Asian countries.

Despite just vestiges, Samanar Malai continues to have a distinct charm – its natural setting and a little bit of imagination on seeing several young 9th century Jain monks running around and over the rocky hill can make one smile, though their lives must have been spartan and serious.

Keezh Kuyil Kudi is 15 km from Madurai on the Nagamalai-Pudukottai Road.

The hermits of Samanar Hills



Jain carvings in the Samanar

Hills. Photo: Wikipedia Commons

Samanar means Jain in Tamil. It is derived from the Sanskrit shramana, which refers to all hermits, not just Jains, or more specifically those who prefer meditation and austerities to Vedic rituals in all matters spiritual. Malai is Tamil for hill. The Samanar stands in the village of Keezh Kuyil Kudi, just 15km outside Madurai, and my friend's suggestion seemed like a perfect detour. So, after a quick lunch, we drove out of the city. Little did I know that going up and down this hill of hermits would be a journey through 2,500 years of Jain history.

The word Dravidian refers to a linguistic group distinct from the Indo-European (Aryan) group of languages. Europeans turned this linguistic group into a racial group, a theory that was very popular across the world until race became a bad word, following the rise of Nazism. Tamil, Telugu, Malayalam and Kannada are the four southern languages with Dravidian root—Tamil being the mother language. The Brahui spoken in Balochistan, Pakistan, is a Dravidian language, suggesting the Dravidian language was widely spoken in the subcontinent a long time ago, leading to speculation that it was pushed south by the arrival of proto-Sanskrit-speaking people (often identified as Aryans, but such a nomenclature is controversial and debatable) into the subcontinent from Eurasia over several centuries from around 2000 BC. This idea is violently opposed by Hindu supremacists, in India and the US, who insist that an advanced homogenous Vedic civilization thrived in South Asia thousands of years ago before being polluted by invaders like the Greeks, the Huns and, especially, the Muslims. We will never really be sure, as long as politics controls scholarship.



The carving of Jain 'tirthankar' Mahavir in the Samanar Hills. Photo: Wikipedia Commons

Tamil culture before the arrival of Vedic culture in the south? We get a glimpse of it at the base of the Samanar Hills itself, where an Amman temple stands in gaudy grandeur next to a lotus pond. We see it surrounded by traditional votive images of guardian gods riding horses. It is a relatively recent construction, and the bright colour and robust style of the imagery is very

different from that found in the orderly, refined Brahminical temple complexes of Tamil Nadu

Had it not been for the efforts of the now almost overlooked field researcher U.V. Swaminatha Iyer, who in the 19th century scoured the countryside for palm-leaf manuscripts, we would not have known much of this earliest layer of Tamil culture: the Sangam period, when the south was ruled by the Cholas, Pandyas and Cheras, at a time when the Mauryas held sway in the north. Sangam literature reveals a culture in which kings respected poets, and poets wrote about war and love. War was associated with cities and love with the countryside, with different landscapes embodying different emotions. This division draws attention to the grama (settlement) and aranya (wilderness) divide found in the Sama Veda. This, and familiarity with the yagna, indicates that by the Sangam period, Vedic ideas had started percolating to the southern half of the subcontinent, from their heartland, the Gangetic plains, where the Vedas were organized and the Upanishads were composed, 2,800 years ago.



Painting by Lalit Jain- The Holy Hermit

Sangam literature has memory of a king who sent food for the “five and hundred”, an obvious reference to the Mahabharat’s Pandavas and Kauravas, of goddesses like Kotravai, who delights in battle, the handsome Seyon, or Murugan, who is represented as a spear atop a mountain, and the cowherd god Mayon, who wrestles bulls and dances with milkmaids. Were these the

forerunners of the classical Puranic deities Kali, Kartikeya and Krishna, or of deities we now address as Amman, Meenakshi and Karuppa-Sami. Many images there, some enshrined, that looked very old, probably ancient Pandyan images, maybe once part of a Jain temple, now turned into deities by the locals. These yellow-brown stone hill stands out against the otherwise flat rice-field plain. It has been observed that Jain shrines were more popular in the southern half of Tamil Nadu, ruled by Pandyas, the Pandya Nadu, while Buddhism was more popular in the northern part, ruled by Cholas, the Chola Nadu. This may have something to do with the presence of stone mountains in the south, the preferred residence of Jain monks. These stone mountains with Jain caves, carvings and epigraphy are today at great risk from illegal stone quarrying.

According to Jain lore, Jainism came to the south in Mauryan times. Chandragupta Maurya, inspired by Alexander the Great, and helped by his Brahmin mentor, Chanakya, had established the Mauryan empire, but then became disillusioned towards the latter part of his reign, following a prolonged drought. He became a Jain monk and accompanied his teacher, Bhadrabahu, to the south, to Shravanabelagola in Karnataka. Bhadrabahu's followers spread the Jain way of thinking and living to Tamil Nadu. At the Samanar Hills, archaeologists have found a 2,200-year-old Tamil-Brahmi script—a variant of Brahmi, which is India's oldest script—referring to the contribution of locals to the welfare of Jain monks. The oldest major Tamil epics—Shilapadikaram, Manimeghalai and Civaka Chintamani—composed over 1,500 years ago are also Jain and speak of the city of Madurai and its rich merchants whose wealth made local kings nervous. They also speak of the tension between lovers and renunciation as a viable option for both men and women who are disillusioned by the sensory charms of the worldly life.

Unlike Buddhism, whose followers were expected to become monks, Jainism allowed its lay followers, the shravakas, to earn merit by taking care of monks. And so archaeologists have identified 26 caves, 200 stone beds, 60 inscriptions and over 100 sculptures of Jain heritage in and around Madurai, such as the one on Samanar Hills, where I stood.

There are two major caves on Samanar Hills, one more easily accessible, known as Settipodavu, and the other with a rather steep climb, known as Pechipallam.



A fresco of dancers from the Chola period.

At the easily accessible cave, my friend pointed out the rain drip line, an artificial tear above the entrance of the cave, created to ensure that rainwater does not go into the cave but trickles away from it by the side. Then you see the fabulous carvings on the walls—stark lines with minimal ornamentation. The grand image of Mahavir with the image of a lion below him and beside him his guardians yaksha and yakshi, their feet pointing away from him, and a grand umbrella above him. His full lips, the slight bulge of what we now call “love-handles” and the straight lines of his arms, his crossed legs and broad shoulders filled me with awe. The underlying sensuality, often missing in modern Jain carvings, was unmistakable. The artisans were following the principles of shilpa-shastra, or the treatise of image-making, that seeks to fill the stone images with prana or life, a feeling that it is enlivened by breath, and softness. The broad shoulders and narrow waist attest to the fact that Mahavir came from a royal family. The slight plumpness is critical to indicate that the fasting is balanced by enlightenment. Fasting strips the body of life and energy and beauty while enlightenment reverses the process.

There are higher, more inaccessible cave with a steep, hour-long climb. It has a perennial pool of water, a reason why the monks probably favoured this hill. It also has a large sculpture with the images of many tirthankars, including Mahavir (identified with his symbol, the lion) and Parsva (identified by the

hooded serpent over his head). There is also an image of Bahubali, who is not a tirthankar. He is of lesser rank, though he lived much before Mahavir, being the second son of the first tirthankar, Rishabha. The story goes that Bahubali was far more accomplished than his brothers, but his competitive spirit and his refusal to bow to those senior to him, in status or age, fettered him to the ground, a thought symbolically represented by plant vines coiling around his feet, tying him down.

Both caves of Samanar have many inscriptions, in the Kannada and Tamil languages, using scripts such as the old south Indian Vatteluttu script. They indicate a connection between the Jains of Tamil Nadu and Karnataka, and a history of a thousand years, for the last ones have been dated to the ninth century. Then the Jain culture started to wane, though unlike Buddhism, it was not completely wiped out. It survived because of the great goodwill created by Jain hospitals and educational services and the refuge offered to political fugitives. Today, there is still a community of nearly 100,000 Tamil Jains in and around Madurai.

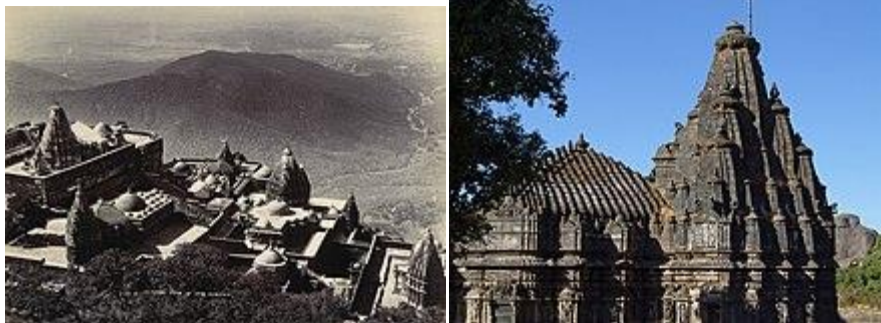
It all started 1,300 years ago, when a new way of thinking emerged in Tamil Nadu: passionate devotion to an all-powerful god. The Nayanars called him Shiva, and the Alvares called him Vishnu. These were the forerunners of the bhakti movement that would eventually spread to north India. This new form of Hinduism was very different from the old Vedic form. It gave much more value to tangible stone icons than to intangible chants and hymns. It valorized the householder (yajamana) over the hermit and the ritualist. Over time, it inspired the grand Shaivite and Vaishnavite temple complexes of the south, such as the Meenakshi-Amman temple complex, which eventually overshadowed the Jain caves and the Jain way of life in Madurai.

Tensions between the monastic orders and temple traditions were inevitable. The earliest such clash may have been the infamous Madurai massacre of the seventh century, when Jains were impaled by the Shaivites. This incident is reported only 500 years later, in manuscripts dating to the 12th century, and is increasingly being seen as political propaganda. The story goes that the poet-sage Sambandhar converted the local Pandyan king from Jainism to Shaivism after defeating the local Jains in debate, and also by curing the king of ailments. Following this, the king had the Jains killed, or the Jains probably followed the rather controversial Jain practice of sallekhana, systematically starving oneself to death, probably in caves and stone beds in places such as Samanar Malai.

The group temples of Jainism are situated on the Mount Girnar situated near Junagadh in Junagadh district, Gujarat, India. These temples are sacred to the Digambara and the Svetambara branches of Jainism.

Hill Temples In Jainism:

Jain Hill Temples are not MOUNTAIN TEMPLEs or TEMPLE MOUNTAIN, they are simply located at an altitude. But sometimes they are built congested and numerous -100-900 so they are called Hill temples or Temple Cities



Girnar Hills looking back down towards Junagadh city. Neminath temple

Hill temples in Jainism can be roughly ascribed to two types.

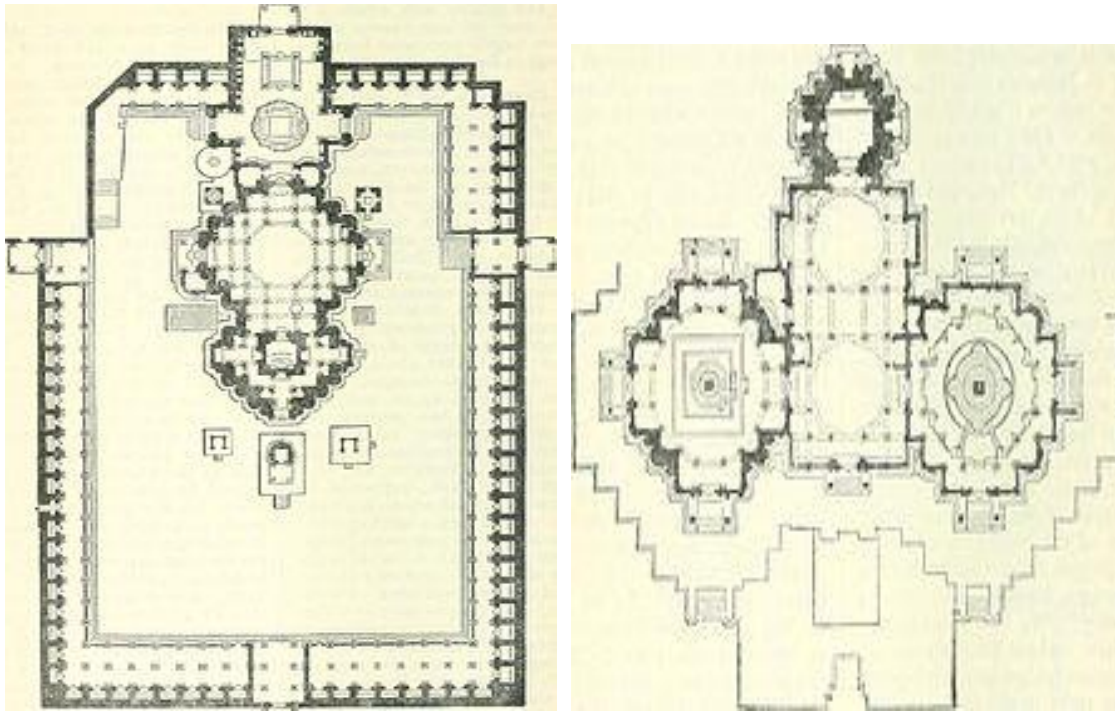
1. Those that were built on Hills in olden times
2. Those are so huge that they have become hills

According to Jain religious beliefs, Neminath, the 22nd Tirthankara Neminath became an ascetic after he saw the slaughter of animals for a feast on his wedding. He renounced all worldly pleasures and came to Mount Girnar to attain salvation. He attained omniscience and Moksha (died) on the Mount Girnar. His bride-to-be Rajulmati also renounced and became a nun.

Jain Temples

This temple is situated on the hill of Girnar. Here Jain tirthankar /lord Neminath temple is situated. Required good amount of physical strength to reach here. Also doli/palkhi facilities are available to reach this place. Girnar was anciently called Raivata or Ujjayanta, sacred amongst the Jains to Neminath, the 22nd Tirthankar, and a place of pilgrimage before 250 BCE. Situated on the first plateau of Mount Girnar at the height of about 3800 steps, at an altitude of 2370 ft above Junagadh, still some 600 ft below the first summit of Girnar, there are Jain temples with marvelous carvings in marble. Some 16 Jain temples here form a sort of fort on the ledge at the top of the great cliff. These temples are along the west face of the hill, and are all enclosed.

Neminath Temple



Plan of Neminath Jain Temple..... Plan of Vastupala-vihara(on right)

The Neminath temple is the largest temple of the group standing in a quadrangular court 195 x 130 feet. The temple was rebuilt completely by Sajjana, the governor of Saurashtra appointed by Jayasimha Siddharaja, in 1129 CE. There is an inscription on one of the pillars of the *mandapa* stating that it was repaired in 1278 CE.

It consists of two *rangamandapa* halls with two porches and a central shrine (*Gudhamandapa*), which contains a large black image of Neminath sitting in the lotus position holding a conch in his palm.

The principal hall in front of the central shrine measures across from door to door inside 41' 7" x 44' 7" from the shrine door to that leading out at the west end. The roof is supported by 22 square columns of granite coated with white lime while the floor is of tessellated marble.

Round the central shrine is a circumambulatory passage (*pradakshina*) with many images in white marble including that of a Ganesha and a Chovishi or slab of the twenty four Tirthankara. Between the outer and inner halls are two shrines.

The outer hall measures 38' x 21' 3". The outer hall has two small raised platforms paved with slabs of yellow stone, covered with representations of feet in pairs called *padukas*, which represent the 2452 feet of the Gandharas, first disciples of Tirthankaras.

On the west of this is a closed entrance with a porch overhanging the perpendicular scarp of the hill. On two of the pillars of the mandapa are inscriptions dated 1275, 1281, and 1278 — dates of restoration.

The enclosure in which these *rangamandapas* and the central shrine are situated, is nearly surrounded inside by 70 little cells, each enshrining a marble image on a bench, with a covered passage running round in front of them lighted by a perforated stone screen.

The principal entrance was originally on the east side of the court; but it is now closed, and the entrance from the south side of court in Khengar's Palace is that now used.

On south side, there is a passage leading into a low dark temple, with granite pillars in lines. Opposite the entrance is a recess containing two large black images; in the back of the recess is a lion rampant, and over it a crocodile in bas-relief. Behind these figures is a room from which is a descent into a cave, with a large white marble image which is mostly concealed. It has a slight hollow in the shoulder, said to be caused by water dropping from the ear, whence it was called *Amijhara*, "nectar drop". There are few shrines in the court dedicated to Jain monks. In the North porch are inscriptions which state that in Samvat 1215 certain Thakurs completed the shrine, and built the Temple of Ambika.

There is a small temple of Adinath behind the Neminath temple facing west which was built by Jagmal Gordhan of Porwad family in VS 1848 under guidance of Jinendra Suri.

Adabadji Adinatha temple

There are three temples to the left of the passage from the north porch of the Neminath temple. Of them, the temple on the south contains a colossal image of Adinatha, the first Tirthankar, exactly like that at Palitana temples. The image is in standing meditating (*kausaggiya*) position. On the throne of this image is a slab of yellow stone carved in 1442, with figures of the 24 Tirthankars.

Panchmeru temple

On the north, opposite the Adabadji temple, there is Panchabai's or Panchmeru temple which was built in VS 1859. It contains five sikhars or spires each enshrining quadruple images.

Meraka-vasahi

West of Panchmeru temple, there is a large temple. The temple is called Malekavasahi, Merakavasahi or Merakavashi due to false identification. Madhusudan Dhaky noted that the Merakavasahi was a small shrine somewhere near east gate of Neminatha temple while the current temple is large one and outside the north gate of the Neminatha temple. Based on its architecture, Dhaky dates the temple to 15th century and notes that it is mentioned as Kharataravasahi built or restored by Bhansali Narpal Sanghavi

in the old itineraries of Jain monks. The temple is depicted in the *Shatrunjaya-Girnar Patta* dated 1451 CE (VS 1507) in Ranakpur temple so it must have built before it. The temple may have been built as early as 1438 CE. Dhaky believes that the temple may have been built on the site of the Satyapuravata Mahavira's temple built by Vastupala.

According to an anecdote said by modern Jain writers, Sajjana, the minister of Chaulukya king Siddharaja Jayasimha, built the Neminatha temple using the state treasury. When he collected the funds to return as a compensation, the king declined to accept it so the funds were used to built the temple. Dhaky concludes that the anecdote is not mentioned in any early work and is false.

Sahastraphana (thousand hooded) Parshwanatha, the image which was consecrated in 1803 CE (VS 1459) by Vijayajinendra Suri, is currently the central deity in the temple. The temple originally housed the golden image of Mahavira and brass images of Shantinatha and Parshwanatha on its sides.

The east facing temple has 52 small shrines surrounding the central temple. It has an open portico with ceilings with fine carvings. In the *bhamti* or cloisters surrounding the court, there are also some remarkable designs in carved ceilings. The roof of the *rangamandapa* has fine carvings. The shrine proper must have been removed and replaced with new one at the end of the sixteenth century or the start of the seventeenth century. It is known that Karmachandra Bachchhavat, minister of the king of Bikaner, had sent a funds to renovate temple in Shatrunjaya and Girnar under Jinachandrasuri IV of Kharatara Gaccha during the reign of Akbar. There is a shrine housing replica of Ashtapada hill in the south, shrine with Shatrunjayavatar in west, behind the main temple, and Samet Shikhar (or Nandishwar Dwipa) in north.

Sangram Soni's Temple

North of the Melakavasahi, there is a temple of Parshwanath in the enclosure. The original temple on the site was Kalyanatraya temple dedicated to Neminatha built by Tejapala, brother of Vastupala. This Kalyanatraya contained quadruple images in three tires as the central deity. The new temple on the site was built in 1438 CE (VS 1494) by Oswal Soni Samarasimha and Vyavahari Maladev. The spire of this 15th century temple is replaced by new spire built c. 1803 CE. The temple is now mistakenly known as Sangram Soni's temple. It was repaired by Premabhai Hemabhai about 1843. It contains a large white marble figure of Parswanatha bearing the date 1803 CE with the polycephalous cobra over him whence he is styled *Seshphani*. This temple is peculiar in having a sort of gallery and like the previous one of the central deity faces the east whilst the others mostly face the west.

Kumarapala's Temple

The last temple to the north is known as the Kumarapala's temple which is falsely attributed to 12th century Chaulukya king Kumarapala. Based on the

literary, epigraphic and architectural evidence, Madhusudan Dhaky concluded that the temple belongs to 15th century and was built by Purnasinha Koshtagarika (Punsi Kothari). The central deity was Shantinatha and was consecrated by Jinakirti Suri probably in 1438 CE. The part of the original temple was destroyed by the 18th century and appears to have been restored in 1824 CE by Hansraja Jetha which is known from the inscription.

The temple is west facing. The original temple had 72 shrines surrounding the central temple which no longer exist. The central temple has a modern long open portico supported by twenty four columns. The temple proper or *mandapa* and shrine are small and the ceilings and architraves are restored. The *mandapa* with its beautiful pendentive and the pillars and lintels of the portico. The shrine contains three images; in the middle Abhinandana Swami dedicated in 1838 and on either side Adinatha and Sambhavanatha dated 1791.



Kumarapala temple



Mansingha Bhojaraja temple

To the east of the Devakota, there are several temples: the principal being the temple of Mansingha Bhojaraja of Kachchh, an old granite temple near the entrance gate which is now dedicated to Sambhavanatha.

Vastupala Vihara

Vastupala-vihara is a triple temple, the central fane measuring 53 feet by 29½ has two domes and finely carved but much mutilated and the shrine which is 13 feet square with a large niche or *gokhla* on the left side contains an image of Mallinatha. Beneath the image is the inscription mentioning Vastupala and his family members.

On either side this central temple, there is a large hall about 38 feet 6 inches from door to door containing a remarkable solid pile of masonry called a *samovasarana* that on the north side named *Sumeru* having a square base and the other *Sameta Sikhara* with a nearly circular one. Each rises in four tiers of diminishing width almost to the roof and is surmounted by a small square canopy over images. The upper tiers are reached by steps arranged for the purpose. On the outside of the shrine tower are three small niches in which images have been placed and there are stone ladders up to the niches to enable the *pujaris* to reach them. The temple was completed in 1232 CE. There are six large inscriptions of Vastupala in the temple dated VS 1288. Originally Shatrunjayavatara Adinatha was the central deity of the temple. The roofs of temple were rebuilt in the 15th century.

There is another temple on the cliff behind the Vastupala-vihara which is now known as Gumasta temple. The temple was built by Vastupala and was dedicated to Marudevi. Another shrine behind Vastupala-vihara is dedicated to Kapardi Yaksha.

Samprati Raja temple



Samprati Raja temple RIGHT

Dharamchand Hemchand temple

Farther north of the Vastupala-vihara, the Samprati Raja temple is situated. The temple was built in 1453 (VS 1509) CE by Shanraj and Bhumbhav from Khambhat. It was originally dedicated to Vimalanatha. According to Dhaky, the temple was built on the site of Stambhanatirthavatara Parshwanatha temple built by Vastupala. The temple is mistakenly attributed to Maurya ruler Samprati.

It is built against the side of a cliff and is ascended to by a stair. Inside the entrance there is another very steep flight of steps in the porch leading up to a large *mandapa* to the east of which is added a second *mandapa* and a *gambhara* or shrine containing a black image of Neminatha dedicated by Karnarama Jayaraja in 1461.

Other temples

To the east of Vastupala vihara and Samprati Raja temples, and on the face of the hill above, there are other temples among them an old one going by the name of Dharmasa of Mangrol or Dharamchand Hemchand built of grey

granite the image being also of granite. Near it is another ruined shrine in which delicate granite columns rise from the corners of the *sinhasana* or throne carved with many squatting figures. Near this is the only shrine on this mount to Mahavira.

South of this, and 200 feet above the Jain temples on way to the first summit, is the Gaumukhi Shrine, near a plentiful spring of water.

Away on the north, climbing down the steps, there are two shrines dedicated to Neminatha in Sahsavān where he said to have taken renunciation and attained omniscience. Neminatha is said to have attained Nirvana or died on the highest peak of the Girnar. There is a modern Samovasarana temple.

Tanks

Outside to the north of the Kumarapala's temple, there is the Bhima Kunda, a tank measuring 70 feet by 50 feet. Below it and on the verge of the cliff is a smaller tank of water and near it a small canopy supported by three roughly hewn pillars and a piece of rock containing a short octagonal stone called *Hathi pagla* or *Gajapada*, the elephant foot, a stratum on the top of which is of light granite and the rest of dark the lower part is immersed in water most of the year.

Five Peaks

There are 5 tonks on the Girnar hill.

First Peak: After a climb of about 2 miles, there is a Digambar Jain temple and a cave called Rajulmati cave, it is stated that Rajulmati has done penance at this place. There is also a small temple where idol of Bahubali (120 cm) in standing posture is installed. Besides there are footprints of Kundkund. In the temple, the idol of Neminath (Vikram Samvat 1924) is on the main altar. The idols of Parshwanath and Neminath are also there. There is stream called gomukhi ganga and nearby the footprints of 24 tirthanakaras are available.

Second Peak: After 900 steps there are the footprints of Muni Anirudhhkumar and temple of Devi Ambika.

Third Peak: here the footprints of Muni Sambukkumar are installed. Muni has attained nirvana from this place.

Fourth tonk (Peak); Here the footprints of Pradhyman kumar, son of lord krishna are installed here. He attained nirvana from this place.

Fifth tonk; The Fifth tonk is of Lord Neminath's footprints. Lord Neminath, the 22nd tirthankar attained nirvana/moksha from this site.

The vegetarian City of Pālītāṇā is a town in Bhavnagar district, Gujarat, India. It is located 50 km southwest of Bhavnagar city and is a major

pilgrimage centre for Jains. It is first of the two vegetarian cities in the world. It is also a:

JAIN TEMPLE TOWNS

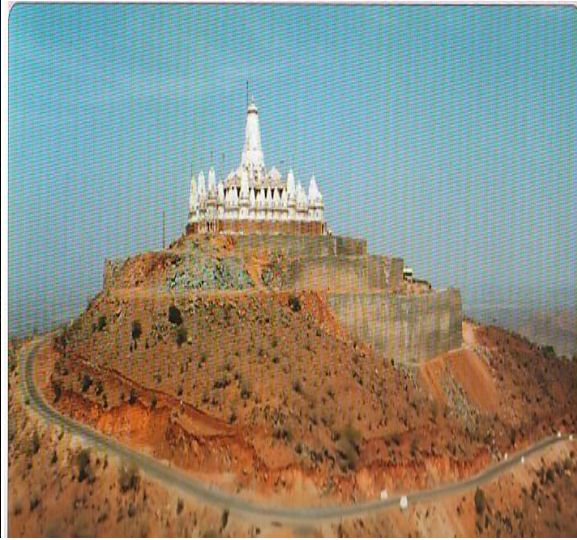
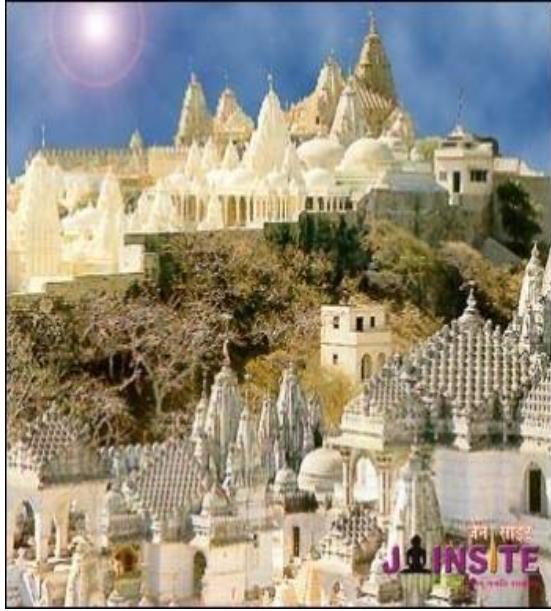


Palitana was founded in 1194. The town is located in Bhavnagar district of Gujarat, India. It is located 50 km southwest of Bhavnagar city. It is a major pilgrimage center for Janis. The Palitana temples of Jainism are located on Shatrunjaya hill. There are a total of 863 Jain temples in Palitana on Shatrunjiya. The path was climbed through 3950 steps spanning 3.5 km up the Shatrunjaya Hills. The construction of temples of Palitana spanned over a period of 900 years. And it was structured in two phases.

Jain Temples in Palitana are mentioned below:-

- Kumar pal temple
- Sampreti Raj temple
- Shri Adwishi temple
- Vimal Shah temple
- Shatrunjay hill temple
- Hastgiri Jain tirth
- Shri Kal Bhairav Dev Mandir
- Kaal Bhairav Mandir
- Radha Krishna Mandir
- Tartiya Hanumanji Temple
- Murlidhar Haveli
- Nagnath temple

Shatrunjaya Hill



Tirth

The Shatrunjaya hill is 3 km away from Palitana. *Shatrunjaya* – Mount Śatruñjaya – is one of the paramount holy places for Jain, especially the Śvetāmbara Mūrti-pūjakas. This site on Shatrunjaya hill is considered as the sacred place for Svetambara Jain. There are 23 to 24 Jain Tirthankaras. There are approximately 863 marble-carved temples. On the hills spread mostly in nine clusters. Some being vast temple complexes, while most small in size.

Hastgiri Jain Tirth

Hastgiri is the beauty of Jain tirth. This place is very calm and beautiful having its natural beauty. Hastgiri is located in hilly region on the Shatrunjaya dam. This place is dedicated to Bhagwan Shri Adishvar – full of white color murti. It is on the top of the hill of the mountain. There are Dharamshala's and bhojanalas for the pilgrims in the vicinity of the temple.

Palitana is associated with Jain legends and history. Ādinātha, the first of the Jain tirthankaras, is said to have meditated on the Shatrunjaya hill, where the Palitana temples were later constructed.

The Palitana State was a princely state, founded in 1194. It was one of the major states in Saurashtra, covering 777 km². In 1921 it had 58,000 inhabitants in 91 villages, generating a 744,416 Rs revenue.

In 1656, Shah Jahan's son Murad Baksh (the then Governor of Gujarat) granted the village of Palitana to the prominent Jain merchant Shantidas Jhaveri. The management of the temples was assigned to the Anandji Kalyanji Trust in 1730.

During the British Raj, Palitana was a princely state in the Kathiawar Agency of the Bombay presidency. Gross revenue, £42,000; tribute jointly to the Gaekwar of Baroda and the Nawab of Junagadh, £700. The capital of the state

was the Palitana town (population 12,800). It was ruled by a Gohil Rajput, with the title of Thakore sahib (also spelled *Thakor Saheb* or *Thakur Sahib*), enjoying a 9-guns salute, of the Hindu Gohel dynasty, which received a privy purse of 180,000 rupees at the state's accession to independent India on 15 February 1948. The last Thakore Sahib of Palitana was Shri Shivendrasinhji Bahadursinhji Gohel the 27th Thakore Sahib of Palitana, who got the title of His Highness after his father HH Thakore Sahib Shri Sir Bahadursinhji Mansinhji Gohel of Palitana died on 18 July 1964. HH Thakore Sahib Shri Shivendrasinhji Bahadursinhji Gohel of Palitana died on 29 June 1990, leaving behind his wife Rajmata Sonia Devi & his son Maharaj Kumar Ketan Shivendrasinhji Gohel of Palitana who reside in Mumbai. MK Ketansinhji is a restaurateur & is the Co-founder & Owner of Brewbot Eatery & Pub Brewery located in Andheri (W), Mumbai.

Geography

Palitana is located at $21^{\circ}31'N71^{\circ}50'E$ $21.52^{\circ}N 71.83^{\circ}E$.

It has an average elevation of 67 metres (219 feet). The Palitana dam, an irrigation resource, is on the Shetrunji River.



Palitana temples

World's only mountain with 900 temples

Palitana is the world's only mountain that has more than 900 temples.

The Palitana temples and whole mountain are considered the most sacred pilgrimage place (*tirtha*) by the Jain community, and is the world's largest Temple Complex. There are more than 3000 temples located on the Shatrunjaya hills, exquisitely carved in marble. The main temple on top of the hill, is dedicated to the first *Tirthankara* Rishabhanatha (Rishabhadeva). The temples were built by generations of Jains over a period of 900 years, from the 11th century onwards. The temples are managed by the Anandji Kalyanji Trust associated with the Kasturbhai Lalbhai group. From the foot of the hill to the top there are about 3,800 stone steps to facilitate climbing.

The temples are exquisitely carved in marble, veritable prayers in stone. To an observer, these appear to be ivory miniatures when seen from a distance. Created by master craftsmen, the most important temple is that of the first teerthankara, Shri Adishwar. It has ornate architectural motifs, though in its overall plan it is simpler than the Choumukh. Other notable temples are those of Kumarpal, Vimalshah and Sampriti Raja. Kumarpal Solanki, a great Jain patron, probably built the earliest temple. The temple has a fabulous collection of jewels, and these can be seen with special permission. The temples date from 11th to the 20th century. From 1865 to 1910 it was ruled by King Dhanpat.

Belief

Every devout Jain aspires to climb to the top of the mountain at least once in his lifetime, because of its sanctity. Not just the temples on the Hill are sacred, but as per Jain Scriptures entire Hill is sacred right from top to bottom. The journey is arduous. The walk up the stone stairway hewn into the mountain face takes about an hour and a half. For those unable or unaccustomed to the strain, sling-chairs are available at a bargain. The code for the climbers is stringent, in keeping with the rigours of the Jain faith. Food must neither be eaten nor carried on the way. The descent must begin before it is evening, for no soul can remain atop the sacred mountain during the night.

Vegetarianism

In 2014, Palitana became the first city in the world to be legally vegetarian. It has outlawed, or made illegal, the buying and selling of meat, fish and eggs, and also related jobs or work, such as fishing and penning 'food animals'.

CHAPTER V

Temple-Mountains: The only temple mountain in India? Masrur Temple

PART I



“In the first half of the eighth century, Indian craftsmen cut back a high ridge of sandstone, its back to the Beās River and the plains beyond, and carved a grand temple-complex facing northeast toward the Dhauladhar range, the first outcropping of the great Himalayan Mountains. Never completed, and damaged by successive earthquakes that sheered the stone and folded parts of the complex back into the hill, the temple at Masrur-in the modern Indian state of Himachal Pradesh-seems today half returned to its primordial condition. Its ground plan, partial section, and a roof plan, drawn by an unidentified Indian draftsman, were published in the second decade of the twentieth century, but scholarship since has neglected and misrepresented the site.”

Michael W. Meister, *Journal of the Society of Architectural Historians* (2006) 65 (1): 26–49. <https://online.ucpress.edu/jsah/article-abstract/65/1/26/60132/Mountain-Temples-and-Temple-Mountains-Masrur?redirectedFrom=fulltext>



So Said Michael W. Meister. He further continues, “It is possible to reconstruct the intention of the planning of this important complex, however, and to reposition it in a historical and symbolic context. Its creation not only marked a movement of political power into the hills in the eighth century, but also mapped cosmological power and kingship in a new way. The metaphor of temple as mountain runs throughout India's traditions of building, but, as this article demonstrates, the temple at Masrur, beyond all others from the Indian subcontinent, provides the antecedent and conceptual model for the great "temple-mountains" of Cambodia soon to be built by kings in southeast Asia.”

The Masrur Temples, also referred to as Masroor Temples or Rock-cut Temples at Masrur, is an early 8th-century complex of rock-cut Hindu temples in the Kangra Valley of Beas River in Himachal Pradesh, India. The Masroor temple is built on the hills situated at a height of around 2500 feet & 32 km from Kangra in Himachal also it is considered one of the wonders of the world.

Millions of devotees reach here every year. Rare carvings on all the walls from the main gate of the temple are still present.

Its construction and carving is nothing short of a mystery to artisans even today. It is said that it took more than 100 years to build this temple. The temple is mysterious. Till date, the artisans could not trace the art of making such artwork. No one is fully aware of the artisans who built the temple. The carvings used in the construction of the temple are said to date back to the Pallava King Narasimha Varman I in the seventh century. It was constructed along with several temples in South India

It was a group of 15 stable and strong rocks which the artisans cut and shaped the temple. These rocks have Indo Aryan style carvings. This is the only temple in northern India that has been built by cutting rocks. Images of Lord Shri Ram, Lakshmana and Sita are inscribed on the main temple. There is also an artwork of Lord Shiva here. This temple is dedicated to Lord Shiva only.

However, the temple has also lost its beauty due to the external invasion and the 1905 earthquake. But today there are only a few who retain their beauty. Some parts of the temple are also kept in the State Museum Shimla. This Masroor temple of Kangra in Himachal Pradesh, which will preserve the unique art and mysterious history, will now become the ideal monument of the country. Under the Adarsh Smarak Yojana, 25 national and world heritage sites across the country have been identified for tourism purpose. The rock-cut temple of Masroor, known as Wonder of World and Himalayan Pyramid, is a unique and mysterious history of the world heritage race. This 8th century temple is the only such temple in North India.

The Masrur Temples are about 45 kilometres (28 mi) southwest of the Dharamshala-McLeod Ganj and 35 kilometres (22 mi) west from the Kangra town in the mountainous state of Himachal Pradesh in north India. The temple is built in the Beas River valley, in the foothills of the Himalayas, facing the snowy peaks of the Dhauladhar range. The temples are about 225 kilometres (140 mi) northwest from Shimla, about 150 kilometres (93 mi) north of Jalandhar and about 85 kilometres (53 mi) east of Pathankot. The nearest railway station is Nagrota Surian, and the nearest airport is Dharamshala(IATA: DHM). The closest major airports with daily services are Amritsar and Jammu.



The temple is located in the Himalayan foothills. Above: the damaged structure with sacred pool in the front.

The rock-cut temple is located in the valley, on the top of a naturally rocky hill, which Hargreaves in 1915 described as, "standing some 2,500 feet above sea level, and commanding, as they [Hindu temples] do, a magnificent view over a beautiful, well-watered and fertile tract, their situation, though remote, is singularly pleasing

The **Masrur Temples**, also referred to as **Masroor Temples** or **Rock-cut Temples at Masrur**, is an early 8th-century complex of rock-cut Hindu temples in the Kangra Valley of Beas River in Himachal Pradesh, India. The temples face northeast, towards the Dhauladhar range of the Himalayas. They are a version of North Indian Nagara architecture style, dedicated to Shiva, Vishnu, Devi and Saura traditions of Hinduism, with its surviving iconography likely inspired by a henotheistic framework.

Though a major temples complex in the surviving form, the archaeological studies suggest that the artists and architects had a far more ambitious plan and the complex remains incomplete. Much of the Masrur's temple's sculpture and reliefs have been lost. They were also quite damaged, most likely from earthquakes.^[1]

The temples were carved out of monolithic rock with a shikhara, and provided with a sacred pool of water as recommended by Hindu texts on temple architecture.^[1] The temple has three entrances on its northeast, southeast and northwest side, two of which are incomplete. Evidence suggests that a fourth entrance was planned and started but left mostly incomplete, something acknowledged by the early 20th-century colonial era archaeology teams but ignored leading to misidentification and erroneous reports. The entire complex is symmetrically laid out on a square grid, where the main temple is surrounded by smaller temples in a mandala pattern. The main sanctum of the temples complex has a square plan, as do other shrines and the mandapa. The temples complex features reliefs of major Vedic and Puranic gods and goddesses, and its friezes narrate legends from the Hindu texts.

The temple complex was first reported by Henry Shuttleworth in 1913 bringing it to the attention of archaeologists.^[3] They were independently surveyed by Harold Hargreaves of the Archaeological Survey of India in 1915. According to

Michael Meister, an art historian and a professor specializing in Indian temple architecture, the Masrur temples are a surviving example of a temple mountain-style Hindu architecture which embodies the earth and mountains around it

INTEGRATED MONUMENT addressed as TEMPLE MOUNTAIN

The main monument at the Masrur temples site appears, at first sight, to be a complex of shrines, but it is an integrated monument. It is also known as the ELLORA of the HIMALAYAS. Its center has a principal shrine which unlike most Hindu temples does not face east, but faces Northeast towards the snowy Himalayan peaks of Dhauladhar range. The main spire is flanked by subsidiary spires of smaller size, all eight symmetrically placed to form an octagon (or two rotated squares). These spires of the temple seem to grow out of the natural rock that makes the mountain. Above the main sanctum, the rock was cut to form the flat roof and the second level of the temple naturally fused with the rising main spire (*shikhara*) as well as the eight subsidiary shrines.

Some structures and the plan at Masrur temple (1913 sketch, incomplete).

The main sanctum has four entrances, of which one on the east side is complete, two on the north and south side are partially complete and the fourth can be seen but is largely incomplete. The eastern entrance had a large mandapa and a portico, but this was destroyed in the 1905 earthquake, its existence known from site visit notes prior to the earthquake. Attached to this mandapa were two stairs to take the pilgrims to the upper-level views. The stairs were set inside smaller two rotating stair spires, but much of the structure of this too is gone. Thus, at one time the main temple had 13 spires according to Hargreaves count, and 15 according to Shuttleworth's count, all designed to appear growing naturally out of the rock.

According to Meister, the early descriptions though well-intentioned were based on information then available and clouded by the presumptions of those authors. These presumptions and generally damaged condition of the complex, for example, led Shuttleworth and Hargreaves to describe the temple in terms such as "subsidiary" and "shrines" instead of witnessing the integrated plan and architecture in early Hindu texts on temple design.

Material of construction

The temple complex was carved out of the natural sandstone rock. In some places, the rock is naturally very hard, which would have been difficult to carve, but is also the reason why the intricate carvings on it have preserved for over 1,000 years. In other places the stone was soft or of medium quality. In some cases, the artists carved with a bit softer stone and this has eroded over time from natural causes. In other cases, the stone's hardness was so low that the artists cut out the stone and substituted it with better stone blocks. Then they added their friezes or sculptures. The substituted blocks have better resisted the effect of nature and time.

Pool and mandapa

The temple complex has a sacred pool in front on the east side. The construction of the sacred pool is dated to the early 8th century. Its rectangular dimensions are about 25 by 50 metres (82 ft × 164 ft), or two stacked squares. The temple had an outside square mandapa with about 27 feet (8.2 m) side and 20 feet (6.1 m) height. It had a solid 1.5 feet (0.46 m) thick roof supported by four carved massive pillars. The platform had a covered drainage system to allow water anywhere on the mandapa to naturally drain off. This was visible before the 1905 quake, now only remnants of the floor and a pillar remain.



Two views of the temple pool.

The entrances lead the pilgrim and visitor towards the main sanctum, through a series of mandapas with wall carvings and then an *antarala* (vestibule). They also connect the created space to a pair of covered stairs, on the north and south side, to the upper floor from where he or she can complete a *pradakshina* (circumambulation) to view more sculptures and the mountain scenery, all of this space and structure created from the pre-existing monolithic rock.

Sanctum and ceiling

The garbhagriha, in a square plan with each side of 13 feet (4.0 m). The main sanctum has a four faced Shiva.

The ceiling of various mandapa and the sanctum inside the temple are fully carved, predominantly with open lotus. However, the inside walls remained incomplete. This may be because the artists carving into the rock worked on cutting and finishing the ceiling first, then moved on to cutting, finishing and decorating the inside walls and creating pillars below those ceilings. The wall height is 16 feet (4.9 m), and only the eastern entrance and passage into the sanctum is fully complete, while the side entrances are not and the fourth western entrance being the least complete. The site suggests that the work was

completed in parallel by teams of workers. This is a common style of construction found in numerous Hindu temples that have survived, at least in the ruins form, from the 1st millennium. The 8th-century three-entry, four-faced Shiva found at the Masrur temple is not unique as the same plan is found in the Jogesvari Cave temple near Mumbai. The Jogesvari is dated to have been completed between 400-450 CE, or several centuries before the Masrur temple's construction, suggesting a common thematic foundation that inspired these temples pre-existed in the Hindu texts.

The art historian Stella Kramrisch identified one of these Hindu architecture texts to be the *Visnudharmottara*, dated to have existed by the 8th-century (floruit), and whose manuscripts have been found with Hindus of the Kashmir valley. This is one of such texts that describe "hundred-and-one [Hindu] temple" designs. According to Meister, the sanctum and spire plan for the Masrur temple fits one of these, where it is called the *Kailasa* design.

The *Kailasa* style of Hindu temple is one with a central Shikhara (spire) symmetrically surrounded by four smaller spires set between the four entrances into the temple from the four cardinal directions, a format that matches the Masrur temple plan. Further, the *Visnudharmottara* text also describes the principles and procedures for image making and painting, the former is also found preserved in the Masrur temple mandapa and sanctum. Further, the Jogesvari and Masrur are not the only surviving temples that correspond to this style, others have been discovered that do, such as the Bajaura Hindu temple in Kulu valley of Himachal Pradesh which is another stone temple.

The multi-spire style, states Meister, is possibly inspired by the Indian Meru mythology shared by Buddhists, Hindus and Jains. Lush mountainous Meru is heaven and the abode of gods, but mountains are not singular but exist in ranges. The highest Mount Kailasha is the abode of Shiva, and the secondary spires symbolize the mountain range. Eight heavenly continents surround the Mount Kailasha in this mythology, where all the *Deva* (gods) and *Devi* (goddesses) live together. The Masrur temple symbolically projects this mythical landscape, narrating the Indian cosmology from stone, into stone.

Spire design

All spires in the Masrur temple are of *Nagara* style, an architecture that was developed and refined in central India in the centuries before the 8th-century. More specifically, these are what Indian texts called the *latina* sub-style, from *lata*. These are curvilinear spires composed of a rhythmic series of superimposed shrinking horizontal square slabs with offsets, each offset called *lata* or grape vine-like, in principle reflecting natural growth on a mountain in stone.



One of the spires with lintel carvings.

The superstructure towers embed styles that are found in Indian temples from the 7th and 8th-century such as in the Mahua Hindu temple and the Alampur Navabrahma Temples, but these are no longer found in temples that can be firmly dated after the 8th-century. This supports dating the Masrur temple to about mid 8th-century. The spires show differences, but all spires that are symmetrically position in the temple mandala show the same design. The stairway spire is based on four turned squares, and features eight rotating *lata* spines that alternate with eight right-angled projections.

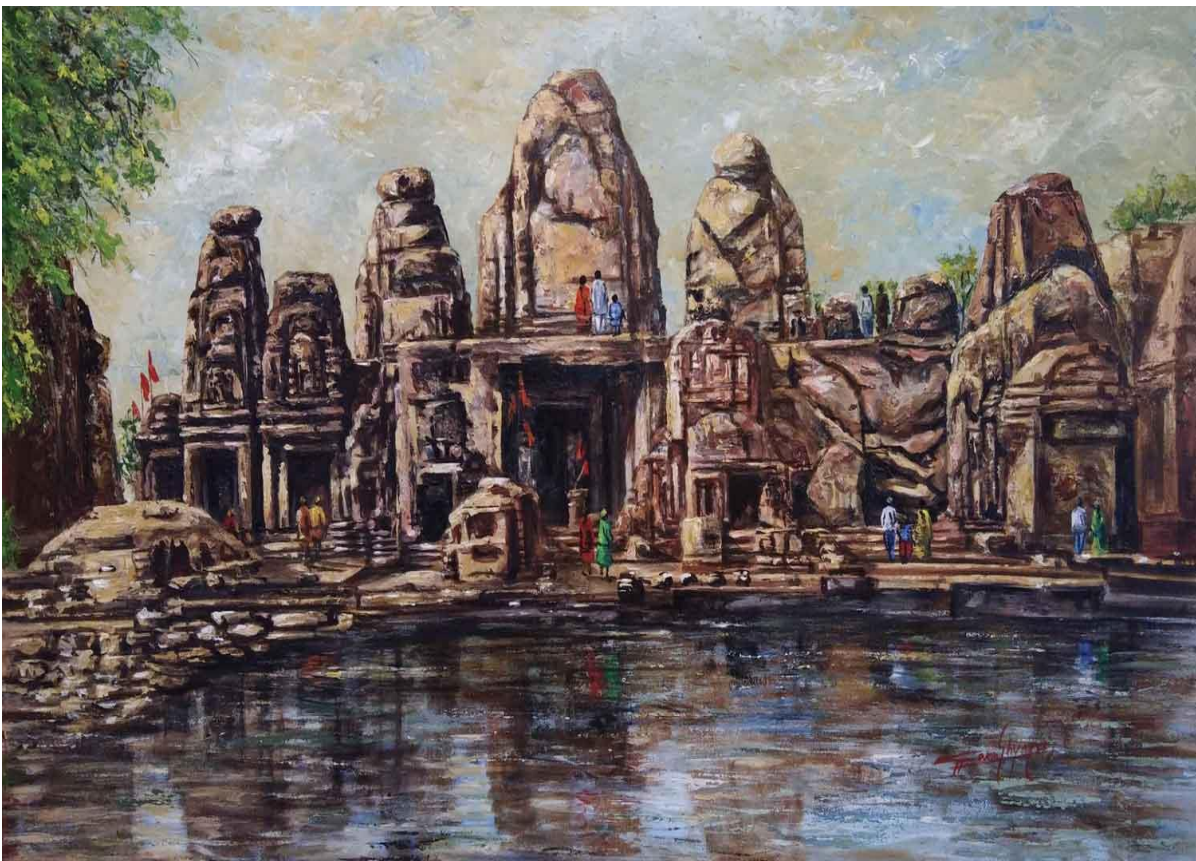
The temple complex also has two free-standing sub-shrines near the sacred pool. These have spires with sixteen *lata* spines, a style that is uncommon in India and found associated with Shiva temples associated with Hindu monks of the Matamayura *matha* between the 7th and 12th century CE such as the Bajaura temple in nearby Kulu valley and the Chandrehi temple in central India.

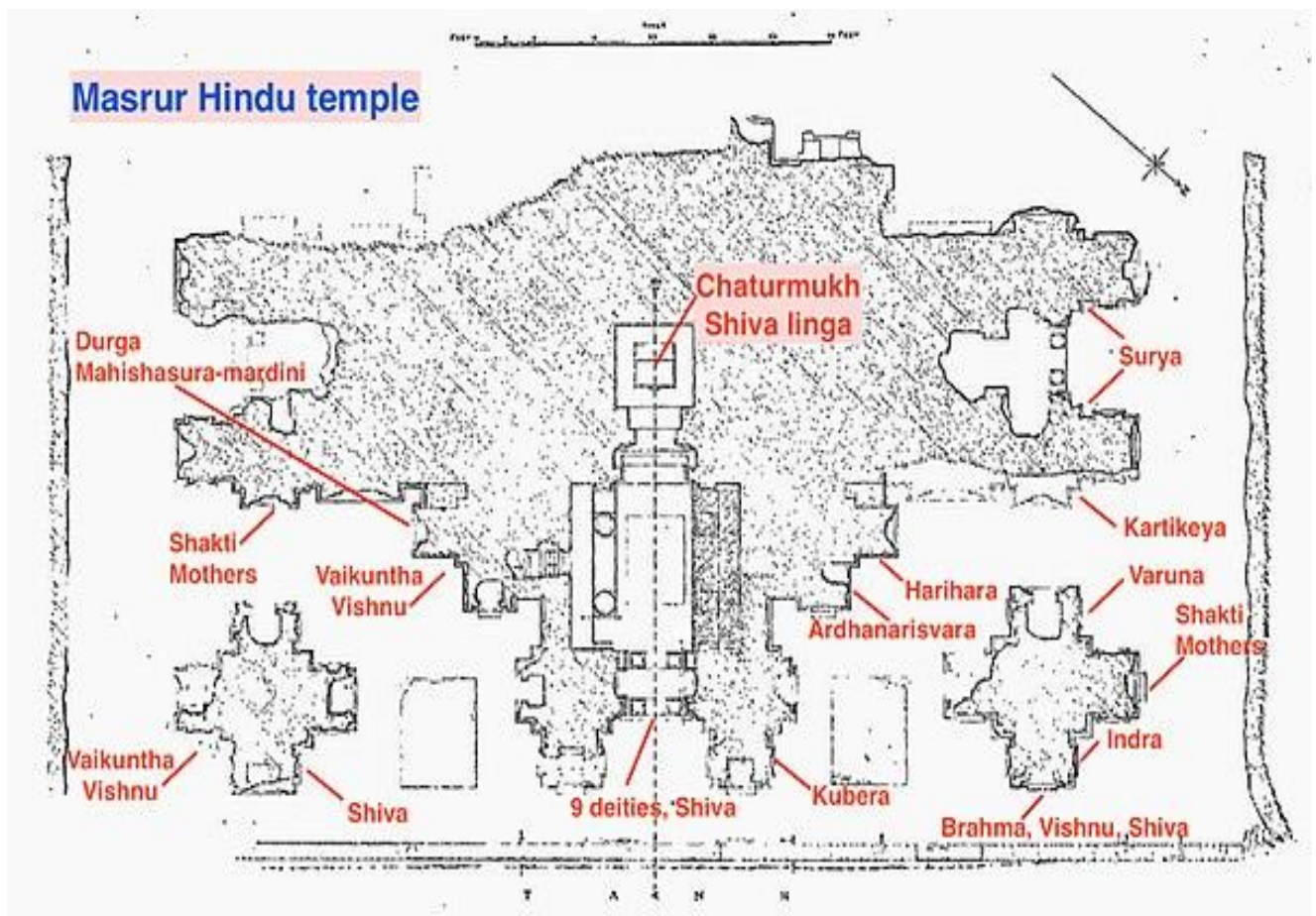
Sculpture and reliefs

The main sanctum has nine seated deities. The center one is Shiva, and with him are others including Vishnu, Indra, Ganesa, Kartikiya and Durga. The shrines around the central shrine feature five Devis in one case, while other shrines reverentially enshrine Vishnu, Lakshmi, Ganesha, Kartikeya, Surya, Indra and Saraswati. The avatars of Vishnu such as the Varaha and the Narasimha are presented in the niches. In the ruins have been found large sculptures of Varuna, Agni and others Vedic deities. The temple also includes fusion or syncretic ideas revered in Hinduism, such as Ardhanarishvara (half Parvati, half Shiva), Harihara (half Vishnu, half Shiva) and a three faced trinity that shows Brahma, Vishnu and Shiva in one sculpture. The temple also has secular images from the common life of people, of couples in courtship and

various levels of intimacy (mithuna), people making music and dancing, apsaras and ornamental scrollwork.

The surviving structures in the Masrur temple lacks any image of Lakulisa, the founder of Pashupata Shaivism, which makes it unlikely that this temple was associated with that tradition. According to Meister, the wide range of Shaiva, Vaishnava, Shakti and Saura (Surya, sun god) themes displayed within the Masrur temple suggest that it was built by those who cherish ecumenism or henotheism, of the style commonly found in Pancharatra literature of Hinduism. More reliefs in the next PartII an excellent photo essay by Jaishree and Manish khamesra.





The Masrur rock-cut temple presents a diversity of iconography, likely reflecting ecumenism or henotheism in 8th-century Hinduism. Above: Incomplete iconography locations.

Pilgrim resthouse

According to Hargreaves, when he visited the temple for the first time in 1913, the temple complex had a dharmashala (pilgrim's resthouse), a kitchen and there was a priest for whom there was a small integrated living quarters. The temple work was priest's part-time work, while his main source of livelihood was from maintaining cattle and working in farms.

Analysis and interpretation

The Masrur temple and the 8th-century *Prasat Ak Yum* temple found in Siam Reap, Cambodia have parallels, in that both are temple mountains with a symmetric design.^[29]

According to a local legend, the Pandavas of Mahabharata fame resided here during their "incognito" exile from their kingdom and built this temple. According to Khan, the identity and location of Pandavas was exposed, so they shifted from here. This is said to be why the temple complex was left unfinished. Sometime in the 20th century, someone introduced three small blackstone statues inside the shrine which faces east. These are of Rama, Lakshmana and Sita of the *Ramayana* fame.

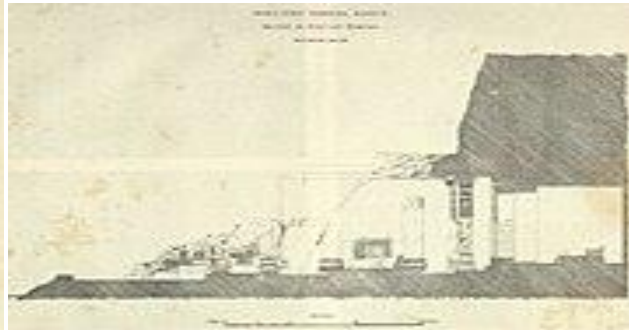
At least since the time Harold Hargreaves visited the temple in 1913, the central temple has been locally called the *Thakurdvara*. According to Khan, the Hindu temples in Masrur show similarities to the Elephanta Caves near Mumbai (1,900 km away), Angkor Wat in Cambodia (4,000 km away), and the rock-cut temples of Mahabalipuram in Tamil Nadu (2,700 km away). The features also suggest the influence of "Gupta classicism", and therefore he places their construction in the 8th century. The area around the temple complex has caves and ruins which, states Khan, suggests that the Masrur region once had a large human settlement.

According to Meister, the temples are from the first half of the 8th century based on the regional political and art history. The temples follow one version of the Nagara architecture, a style that developed in Central India, particularly during the rule of the Hindu king Yasovarman, an art patron. In Kashmir, a region immediately north and northwest of the site, Hindus built temples with square pyramidal towers by the mid 1st millennium CE, such as the numerous stone temples built by Hindu king Lalitaditya, another art patron. These kingdoms traditionally collaborated as well as competed in their construction projects rivalry, while the guilds of artists moved between the two regions, through the valleys of ancient Himachal Pradesh. The region is in the Himalayan terrain and forested, making conquests difficult and expensive. Historical records from the 6th to 12th centuries do not mention any military rivalries in the Beas river Kangra valley region. There is a mention of a Himalayan kingdom of Bharmour just north of Masrur area in early medieval era texts. The 12th-century text *Rajatarangini* as well as the 12th-century Kashmir chronicle by Kalhana, both mention political rivalries in the 9th century but these 11th and 12th century authors were too far removed in time from 8th century events, and they weave in so much ancient mythology that their semi-fictional texts are largely ahistorical and unreliable.

The inscriptions and architecture suggest that Yasovarman's influence had reached the Himalayan foothills in north India, and the central Indian influence is illustrated in the architectural style adopted for Masrur temples rather than the styles found in ruined and excavated temples of the northwestern Indian subcontinent. According to Meister, the influence of middle India must have reached the north Indian region earlier than the 8th century and this style was admired by the royal class and the elites, because this style of temple building is now traceable in many more historic sites such as those in Bajaura and many places in Himachal Pradesh, Uttarakhand, and Nepal where many of the holy rivers of Hindus emerge. Some of the smaller stone temples that have survived from this region in steep mountain terrain are from the 7th century. Further, these large temple complexes in the second half of the 1st millennium were expensive projects and required substantial patronage, which suggests that the earlier examples must have preceded them for wide social and theological acceptance.



Ground plan



Roof plan/Section

Masrur temple plan and section (1915 sketch)

The period between 12th and 19th century was largely of religious wars and geo-political instability across the Indian subcontinent, and the literature of this era do not mention Masrur temples or present any scholarly studies on any Hindu, Jain or Buddhist temples for that matter, rather they mention iconoclasm and temple destruction. After the 12th century, first northwestern Indian subcontinent, then India, in general, witnessed a series of plunder raids and attacks of Turko-Afghan sultans led Muslim armies seeking wealth, geopolitical power and the spread of Islam. Successive Muslim dynasties controlled the Delhi Sultanate as waves of wars, rebellions, secessions, and brutal counter-conquests gripped Indian regions including those in and around Kashmir. The Mughal Empire replaced the Delhi Sultanate in early 16th-century. The Mughal dynasty ruled much of the Indian subcontinent through early 18th-century, and parts of it nominally through the 19th century. The Kangra valley region with Masrur in the Himalayas was ruled by smaller jagirdars and feudatory Hill Rajas who paid tribute to the Mughal administration for many centuries. The arrival of the colonial era marked another seismic shift in the region's politics. By the late 19th century, British India officials had begun archeological surveys and heritage preservation efforts. The first known visits to study the Masrur temples occurred in 1887.

A British empire officer Henry Shuttleworth visited and photographed the temples in 1913, calling it a "Vaishnava temple" and claiming in his report that he was the first European to visit them. He wrote a paper on the temples, which was published by the journal *The Indian Antiquary*. He shared his findings with Harold Hargreaves, then an officer of the Northern Circle of the

Archaeology Survey of India. Hargreaves knew more about Hindu theology, noticed the Shiva linga in the sanctum and he corrected Shuttleworth's report. Hargreaves wrote up his tour and published his photographs and observations in 1915 as a part of the ASI Annual Report Volume 20.^[4] Hargreaves acknowledged the discovery that a draftsman in his office had already toured, measured and created temples plans and sections in 1887, and that some other ASI workers and Europeans had visited the temple in 1875 and after 1887. The Hargreaves report described the site as many temples, listed iconography at these temples from different Hindu traditions, mentioned his speculations on links with Mahabalipuram monuments and Gandhara art, and other theories. The Hargreaves text became the introduction to Masrur temples for guides by reporters with little to no background knowledge of Indian temple traditions or Hindu theology. As quoted above, according to Meister, these early 20th century writings became a source of the temple's misidentification and misrepresentations that followed.

Earthquake damage



Damaged right-hand section, with reflection in the sacred pool. The site was already damaged but still in decent condition in the late 19th-century. Hargreaves wrote that, "the remote situation and general inaccessibility of the temples have been at once the cause of their neglect and of their fortunate escape from the destroying hands of the various Muhammadan invaders of the valley". In the 1905 Kangra earthquake, the Himachal valley region was devastated. Numerous ancient monuments were destroyed. However, although parts of the Masrur temple cracked and tumbled, the temple remained standing, because of its monolithic nature built out of stone in-situ.

The damage from wars and 1905 earthquake of the region has made comparative studies difficult. However, the careful measurements and

drawings made by the unknown draftsman in 1887, particularly of the roof level and mandapa which were destroyed in 1905, have been a significant source for late 20th-century scholarship. It supports Shuttleworth's early comments that the temple complex has a "perfect symmetry of design"

For more details read the excellent article by Ms Manish and Mr. Manish Khamesra

<https://manishjaishree.com/masrur-temple-himachal-guide/>

PART -II

Masrur is a puzzle!

A puzzle standing majestically in the lap of Himalayas!

By Authors Ms. Jaishree and Mr. Manish Khamesra

<https://manishjaishree.com/masrur-temple-himachal-guide/>

Who built Masrur temple? When was Masrur temple built? No one is yet able to say anything with certainty about it. Every suggestion put forward is a suggestion, as yet. Such a grand excavated temple and yet no inscription to give any clue about the dynasty or the time period or the king or the patrons.



Masrur

Temple complex

What is the plan of the Masrur temple complex? Again, many suggestions and guesses. The temple complex, still able to stand after neglect and earthquakes is a wonder and blessing for us. To a visitor, it appears like a giant monolith excavated temple, of which, he cannot make a head or tail. Everything is so jumbled and folded up that it is now a heaped mass of puzzle pieces. It is difficult to even make a rough idea of its architectural plan.

Unless one studies about it and studies with patience, it is beyond even slightest comprehension. Hours and hours of reading of the available material and yet I am hesitant to write a post on it. Pardon me if you find this post equally jumbled up!!

What do we know about Masrur temples?

Before I confuse it further, first a few things which are certain about it.

- It is neither a cave temple nor a stone temple - i.e. a constructed temple. Masrur is a **rock cut temple**. It was excavated by scooping out the solid mass of rock from a hill, at an altitude of 2500 feet. Kailash temple in Ellora and Rath temples in Mahabalipuram are few other rock cut temples in India. Further, both Ellora and Mahabalipuram rock cut temples follow Dravidian style, but this temple is distinctly in the North Indian Nagara style.
- It is a Shiva temple as the temple lintel has Shiva images on it. Although today one finds statues of Lord Rama, Laxman and Sita. Thus, now it is known as Thakurdwara. These statues were definitely placed in later years. There is a temple pond in front of the temple, which too was constructed by scooping out the hill.
- Originally this complex had 19 shrines, but four were seriously damaged in the 1905 earthquake.

History of discovery of Masrur Temple

We find the first reference of Masrur temples in 1875 CE as monuments of antiquity in journal *Objects of antiquarian interest in the Punjab and its dependencies*, Lahore, 1875.

It goes into the ASI annals in 1914-15 CE only. Powerful earthquake in 1905 damaged Masrur temples badly, folding the priceless antiquity upon itself. As with many other monuments, a British officer - one Mr Henry Lee Shuttleworth discovered it in 1913. He reported his find to an officer in ASI - Mr Hargreaves who then published a written account of it.

Dating of the Masrur temples

All the suggestions and opinions about the dating of the Masrur temples is based entirely on its architectural style and elements. We all know that temple architectural development across India has an assessable time period and its geographical prevalence based on the architectural style.

The characteristic features of the Nagara temples in Himachal are similar to those in North India. There is a pillared hall and a *garbhagrih*. The sanctum has three elements - chamber, wall and the tower (*Shikhara*). The Shikhara rises multiple storeys till it reaches the *Griva*- the neck. Above the *griva* (neck), the shikhara has three parts: *amalaka*, *chandrika*, and *kalasha*.

Nagara style shikhara has three distinctive styles: Latina, Phamsana and Valabhi. Latina style is most common and has walls of Shikhara curve in-wards.

Phamsanashikhars are shorter and broader; these do not curve inward, instead they slope in a straight incline as they move upward. Valabhi style has the vaulted chamber (like the wagon of bullock carts) as Shikhra.



Masrur temple has a sanctum, a pillared hall of which only pillar fragments survive and Latina Nagara style Shikhara.

How to decide which stage Masrur Latina Shikhara belong to?

For this, we must dig a little to understand the evolution of Nagara style. Nagara style temple developed over a time, changing the style and pattern.

The history of Nagara style temples begins with the Guptas and their successors from 5th to 7th century. This temple style then passes through various dynasties in different centuries and different regions- like to Early Chalukyas (7th to 8th century) , the Kalingas and the Eastern Gangas (8th to 13th century), the Pratiharas and the Chandelas (8th to 11th century), Maitrakas and the Solankies (8th to13th century) and the Rajputs (8th to 12th century).

The earliest temples from 5th CE has a sanctum and a hall but no curvilinear shikhara. We first get to see the shikhra in Dashavtar Temple in Deogarh (dated 6th CE). Through 7th to 8th CE, pillared mandap and longer shikhra become characteristic of this style.

During 7th CE, we see the distinctive Latina Shikhara.

What is a Latina Shikhara in Hindu temples?

The Latina shikhara is composed of a series of horizontal roof slabs gradually receding and bending inwards towards the top. The surface of shikhara is covered with vine like tracery, composed of diminutive chandrasalas. Then the structure truncates at the top, above which sits a neck. The griva has an *Amalaki* and then a *Kalash* at the top.

The Shikhara of Masrur temple have this evolved Latina Shikhara style.

After reading what is available in papers and books, which give wild swinging assumptions about its date, I found the paper by Mr Michael W. Meister the better among all.

According to Meister:

1. Dating of the Masrur temple to the eighth century has on the whole followed the suggestions of Hargreaves and Shuttleworth, but with little further investigation. Its sculptural decoration strongly resembles that of the wood temple at Chatrari, usually dated to the early eighth century, based on the epigraphy of bronze inscriptions from the time of Meruvarman, a local ruler.
2. A crucial architectural element for my estimation of the temple's dating is the presence of a well-formed balapanjara (the string of pillared pavilions in the recess) in some of Masrur's latinasikharas. This element is a critical and defining remnant of Nagara formation of the seventh century, found at widespread sites from Mahua in Madhya Pradesh to Alampur in Andhra, that disappeared in middle India by late in the eighth century.
3. While it may never be possible to determine the duration of excavation and carving at Masrur, I would suggest the second and third quarters of the eighth century, overlapping the reigns of both Yasovarman (ca. 725-754) and Lalitaditya (ca. 724-760).

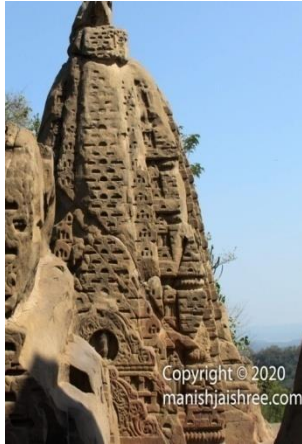
Mountain Temples and Temple-Mountains: Masrur

Author(s): Michael W. Meister

Source: Journal of the Society of Architectural Historians, Vol. 65, No. 1 (Mar., 2006), pp. 26-49

What is Balapanjara?

Balapanjara is miniature front of an apsidal shrine used as a decorative motif; a vertical chain of such motifs in the recesses between corner and flanking bands of the Latina superstructure; sikhara-salient showing a vertical sequence of miniature panjara-frontons.



From right, move to left. You see those miniature shrines all along the verticality. These are Balapanjara.

"Such a band of Panjaras, sometimes peopled with inhabitants of the place (such are found in North India only in Orissa), can be found in the Eastern India in Bhubaneswar in Parsurameswara temple (AD 600-650) and other temples, Alampur (AP), Pattadakal (Karnataka), Mahua, Amrol, Naresar, Batesar (Central India), Osian and Lamba in Rajasthan.

This broad ornamentation recession on early latina temples, elaborated by a chain of such Panjara niches, loses its ornamentation in most temples by the end of 8th CE, becomes merely a shadow recess, accenting the tower's verticality. The more, fully articulated form appears once again as late as 10th CE in Muktesvara temple in Orissa."

So, in nut shell, based on the latina shikharas of the mature Nagara style, Masrur temple is dated to the middle to late 8th CE.

Who built Masrur Temples?

There is no inscription found till date about this temple. Nor do any literature mentions anything about this temple complex. However, the grandeur and scale of the complex required ample funds, which could not be commissioned other than by some wealthy and powerful ruler or some wealthy trader.

What makes the puzzle more complex is that this is the one of its kind of temple in the entire Himalayan region. It has characteristic late matured Nagara style of architecture, which developed in North India. As it owns the Nagara style, the sculptors and artisans must have come from the plains of India, where this Nagara style was already in vogue since 5 CE onwards.



Masrur Temple complex

After having guesstimated the broader timeline of the Masrur temples, now the guesswork goes to possible kings or dynasties who were prosperous enough to build such a grand temple complex.

Again, not only the date-line but the possible artisans, we guess the answer to these from the Nagara style Latina Shikhara. To build this grand scale temple in Nagara style, artisans must have come from plains where this was an established style by then.

Why King Yashovarman of Kannauj is believed to be the possible patron of Masrur temple ?

A little search into the history of **this timeline** throws two names who were rich and powerful - King Lalitaditya of Kashmir and King Yasovarman of Kannauj. Remember, we are making guesses about patrons based on guess estimated time-line, which in turn is based solely on the architectural elements and style.

Yashovarman of Kannauj and King Lalitaditya of Kashmir rivalled for glory of sprawling empires during 8th CE. Poet Kalhana (12 th CE) in his epic *Rajatarangini*, writes about both kings, but as he was a poet in the court of Kashmir kings, his leaning towards Lalitaditya is understandable. The poet in Yasovarman court - Vakapatiraja gives a detail account of the land of Himalayas that Yasovarman conquered in his 8th CE poem "*Gaudavaho*".

Meister's Analysis for Yashovarman vs Lalitaditya

Architectural remains may provide evidence of Yasovarman's importance relative to Lalitaditya that is more convincing than Kalhana's twelfth century panegyric. Nagara

stone architecture in the lower Himalayas in the eighth century suggests a movement of power and patronage from the plains to the hills. ...

At Masrur and Bajaura, two mature and developed Nagara stone temples, both commissions requiring significant patronage and political stability, had been constructed by the end of the century.

These temples demonstrate, in contrast to Kalhana's catalogue of Kashmir valley's many pyramidal temple sites, that patronage in the hill states had, by the eighth century, incorporated Nagara forms then dominant in Yasovarman's India.

Mountain Temples and Temple-Mountains: Masrur

Author(s): Michael W. Meister

Source: Journal of the Society of Architectural Historians, Vol. 65, No. 1 (Mar., 2006), pp. 26-49



Masrur temple complex as seen from first floor

The sub-Himalayan hill state was not under any notable powerful dynasty of its own. It kept falling under Kashmir and middle Indian kingdoms just as its location is - between Kashmir and Gangetic plains. Who conquered and ruled over these areas at a particular time is not so very clear in the history.

But there is no denying that the kingdoms of northern plains have reached Himalayas as early as Mauryans and Kushanas. The significant point is - Kashmir had mainly Pagoda / pyramidal style architecture in temples by then and Nagara style firmly belonged to kingdoms of plains.

Further Yasovarman vs Lalitaditya discussion

Many stone temples in the Himalayas, most typically in Kashmir have pyramidal towers with pent-roof gables. Under King Lalitaditya in Kashmir in the eighth century, this stone typology took on an exemplifying role, characterizing that kingdom and distinguishing it from all others.

Yet as early as the beginning of the eighth century a distinctive type of curvilinear tower, with offset planes and vertical bands (lata) the "latina Nagara" temple of middle India was introduced into the hill regions of the lower Himalayas (the states of Himachal and Uttaranchal).

The Nagara formula had most often a single sanctum with tower and an axial entry hall or portico. It evolved in the sixth century in the Gangetic valley and central India, establishing itself widely in the next century from Saurashtra and the Salt Range in the west and the northwest to Orissa and Bengal in the east, and from the hill states of the lower Himalayas to the Deccan in the south.

The introduction of a Nagara stone-temple formula in the hill states early in the eighth century may represent political inroads made by Yasovarman, king of middle India, ruling from Kanauj. Monuments in some cases offer more solid data than texts, and I argue that in this case they do.

Mountain Temples and Temple-Mountains: Masrur

Author(s): Michael W. Meister

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With all these facts and analysis and many more conjectures, King Yashovarman seems to be the most suitable patron of the temple for now, till we find some other inscriptions or plate or some other concrete evidence.

My doubts and questions on who built Masrur?

Kangra was a prosperous region, lying on the busy trade route from Tibet, Kashmir going towards trading centres of Punjab. There must have been many wealthy merchants settled in Kangra valley, who might have been originally from Northern Plains. Even if they were not from plains, they definitely had well oiled connections with business community in plains.

Further, Baijnath temple inscription (Baijnath temple in Kangra valley), tells us specifically that Baijnath temple was built by a well known merchant Ahuka in 1205 AD.

There lived here, the two sons of the merchant called Siddha, who were inclined towards righteousness and were blessed. Elder was Manuhka and they called younger as Ahuka.....

The two, seeing the phallus symbol of Vaidyanatha, without a home, furnished it with a temple and in front of it constructed a porch.....

There is in Kiragrama, a machine for tracting oil, belonging to Manuka and Ahuka. That too has been donated by them to Siva, for providing oil for the lamps in the temple.<http://bajinathtemple.com/archaeology.htm>

That makes me think, Masrur could as well have been built by some wealthy merchant just as Bajinath.

Architectural plan of Masrur temple

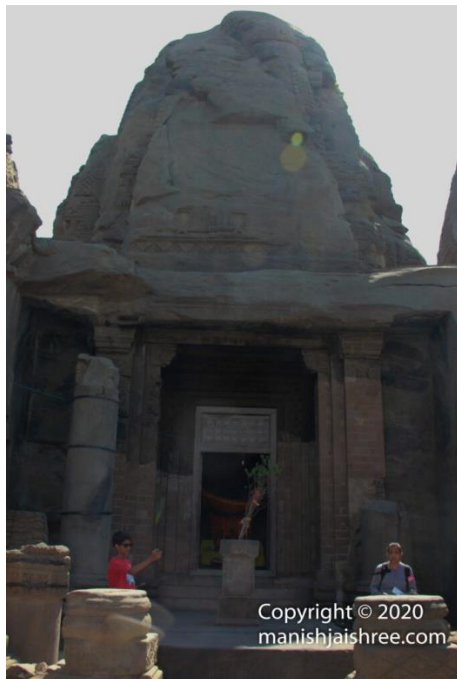
At first, it seems an extravagant and confused mass of spires, doorways and ornament. The perfect symmetry of the design, all centering in one supreme spire, immediately over the small main cell, which together form the *vimana*, can only be realized after a careful examination of each part in relation to the other.

—Henry Shuttleworth, 1913

What we see in the temple today is the destroyed shrine cluster. When we reach to the end of this article, we will see that is is not just destroyed, it was left unfinished to a great extent.

Let us first understand the surviving and finished structures by taking a tour of the temple.

Masrur Temple Pictorial Tour



The main sanctum

The main sanctum-called Thakurdwara now, these days houses Lord Ram, Sita and Laxman murtis, had a mandapa and an Antarala. The central image of Shiva in the lintel of the main sanctum proves it as a Shiva temple. Mandapa is all collapsed and you can only imagine it. However, Anatarala is there. The ceiling in the anatarala is well preserved and we see the lotus and diamond carving on the ceiling.



The four massive pillars that supported the mandap of main shrine are still there, though in fragments. These were not scooped from monolithic mass of hill, these were separate. The square bases of these pillar had elaborate carvings which is still well preserved.



A view from above shows the fallen pillar bases, entrance to the Mandapa and the empty space left by fallen Mandapa.

Subshrines

Various article say that the besides this central shrine, there are seven sub shrines on its each side, thus 14 subshrines in all. I can not recall it exactly. Maybe, when you

visit, you can give me a practical update! (I can only presume things now, having forgotten the fine details by now).

Only this central shrine is cut from inside giving it a sanctum, antaral and Mandap. Other shrines are only cut from outside, like a niche in the wall.

Nische shrines

The door to the central shrine has five receding jambs and lintels, the lintel in its third layer has Shiva image in the center, confirming that it was a Shiva temple. River goddess Ganga and Jamuna stand on both side of the door.

Staircase Shrines

On either side of the Mandapa, a staircase leads to the upper floor. When we went there in 2015, the left stairway was open for viewers. The right staircase is already destroyed.



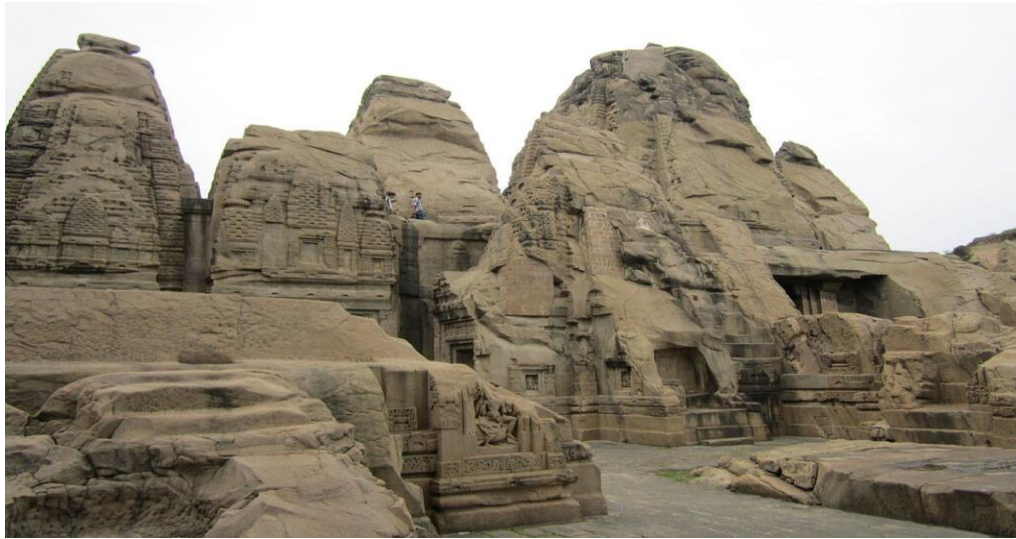
Entrance to the Staircase, Masrur temple, Himachal

Entrance to the staircase also has the carved doorjambs, as if it is a shrine. Climbing up this staircase, we reach to the upper floor, which gives a wonderful panoramic view of the surroundings. It also allows us to have closer look of the Latina Shikharas.

The horse hoofed patterns/chandrasalas dot the rising Shikhara. Shikharas have three successive medallions with Trimurti Shivamukhas in them.

Other Shrines

Coming back to the ground floor, when you face the main shrine, you will find that its left side is in much better condition than the right. Mandapa hall is now lost so what we see on left side, is more or less in a straight line with main shrine.



This picture clearly shows the free standing monolithis shrine base in the left corner, and Latina and Valabhi shikhara of left side.

The front view of the left side to main shrine give us a stair shrine and a Latina shikhara above it, then a rectangular shrine with a Valabhi shikhara, then the corner most shrine with a latina shikhara. Same was on the right side, but now destroyed.

Other Mandapa entrances

Now, turn the corner, and there are two chambers on either side of this complex, in the north and south direction. We can still see the unfinished rectangular door jambs of the possible entry to the planned but unexecuted Mandapa on the sides.



Besides, there are two free standing, cruciform, monolithic shrines on both sides of the front Mandap.

Visualizing Masrur the MOUNTAIN of a TEMPLE

The picture on the next page shows the front view of the temple complex, where you can easily see the central shrine and central Shikhara, sideways shrine to the fallen Mandapa of which left one has a Shikhara remnant also, two flanking side Shikhara to the central Shikhara, a Valabhi Shikhara and another latina shikhara on the cornermost shrine.

The free standing monolithic shrines on the two corners in front, where left one only has the base remaining, and right one has the partially damaged shrine as well as shikhara.

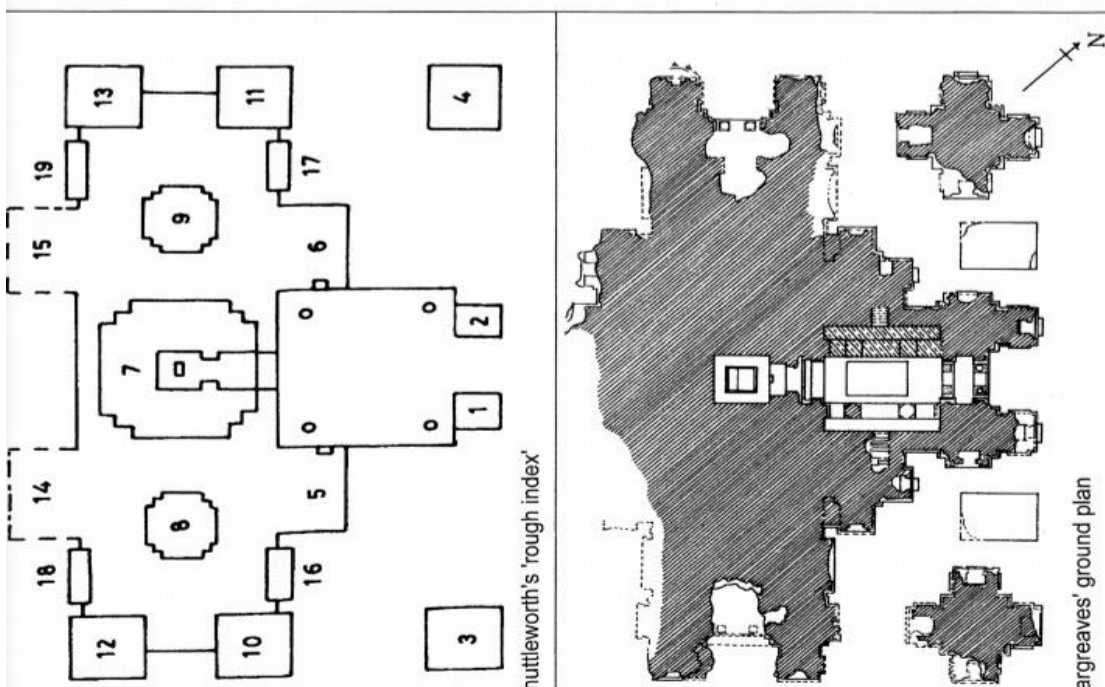


But what was the actual plan or the possible plan of the Masrur temples?

As you have seen from the above tour, that the current temple is difficult to give a good idea of the plan. Again, we go the Meister paper and other discussions.

Shuttleworth and Haregreavs' drafts

The picture below, borrowed from the Meister paper, shows Shuttleworth's rough index and Haregreavs' published ground plan of Masrur temple.



- 1 and 2 - the shrines frame the entrance to the Mandapa,
- 3 and 4 - independent shrines,
- 5 and 6 - stairways not shrines,
- 7- central Shikhara,
- 8 and 9 - two flanking shikharas,
- 10 to 13 - these four structures frame two large entrances to the planned but unfinished courts
- 5-6-14-15 - barrel vault valabhi structures.

Current elements and guess work

Today, the Central Shikhara has two flanking shikharas in the north and south, though there are no Mandapas below. The Shikhara over the existing destroyed Mandapa on the east is no more. This suggests that architects planned two more entries to the main sanctum through north and south (left and right to the current cella). They could not finish these on the ground floor though Shikharas were scooped and sculpted out.

Then by various conjectures, Meister goes on to suggest that there was to be a fourth Mandapa and entrance also from the west side(back of the temple complex). The whole complex was to have one Sanctum Santorum, approached from all the four sides through well planned Mandapa, thus making it an integrated four Mandapa temple.

Not just that, today we see two stairway shrines (of which one is destroyed and inaccessible), one of which takes us to the first floor of the temple. Meister, giving

various assumptions and drafts by Shuttleworth and Haregreaves, goes on to assert that there were to be four more diagonally flanking Shikharas to the central Shikhara, above the possible four stairway shrines in the original artistic plan by the architects.

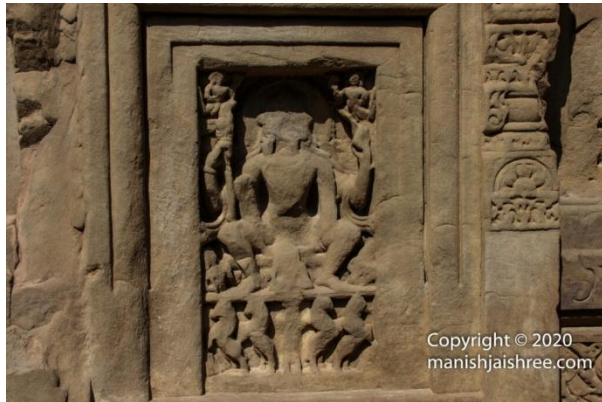


surviving Shikharas in Masrur temple complex bouquet of

That makes the plan now extremely complex and exquisite. Thus it was to have a splendid bouquet of Shikharas - one Central the largest, 8 flanking shikharas to the central one, 8 more shikharas - two each on the sides of the planned four Mandapas, 4 Valabhi shikharas on the east-west side. It was thus, very much similar to Angkor Wat, though on a very small scale. Any connection between this temple design and the later built Angkor is still unknown.



Exploring the Iconography of Masrur Temples



REFERENCES

1. Stable URL: <http://www.jstor.org/stable/25068237>
2. https://en.wikipedia.org/wiki/Masrur_Temples
3. https://www.researchgate.net/publication/302292981_Architecture_of_the_Rock-Cut_Temples_of_Masrur
4. <https://www.sahapedia.org/monolithic-temples-of-masrur>

CHAPTER VI

Mountain of INDRA or Mahendraparvata

The Lost Mountain City of God Indra



ABSTRACT

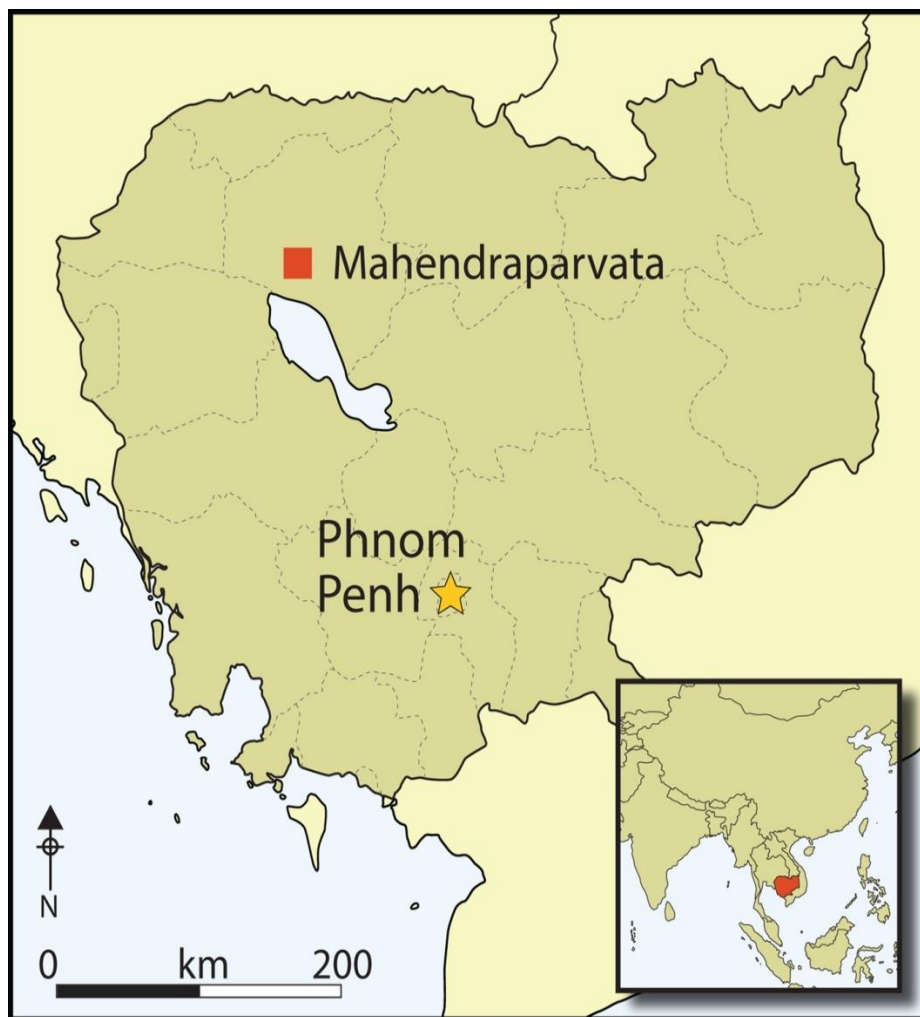
This article is a combination and scopic review of existing material on the efforts made to identify the existence of the city by locating its remains. Various efforts made some successful and some not are recapitulated here for the benefit of the lay reader.

Mahendraparvata, believed to have been the first capital of the Khmer Empire, a powerful Southeast Asian state that existed during the Angkor period from the 9th to 15th centuries, had long-eluded archeologists, who knew of its

existence but were unable to map it out because of the difficult terrain. Studies of the city were further hampered by landmines leftover from Khmer Rouge.

The name Mahendraparvata means "Mountain of the Great Indra". It is derived from the Sanskrit words महेन्द्र (*Great Indra*, a title of the Hindu god Indra) and पर्वत (*mountain*) and is a reference to the sacred hill top site commonly known as "Phnom Kulen" today where Jayavarman II was consecrated as the first king of the Khmer Empire in 802. The name is attested in inscriptions on the Angkor-area Ak Yum temple.

Mahendraparvata is located 40 kilometres (25 mi) north of the Angkor Wat complex, 45 kilometres (28 mi) north of Siem Reap, on the slopes of Phnom Kulen mountain in Siem Reap Province.



Introduction

The Angkor region of Cambodia in Southeast Asia (Figure 1) is best known for its monumental temples of brick and stone, such as Angkor Wat, most of which were built between the ninth and thirteenth centuries AD. Recently, interest in

the social and environmental context of these temples has grown , with researchers using a range of techniques to illuminate the everyday lives of the people who built them and inhabited the surrounding areas.

Although Angkorian cities were built of perishable materials that have largely disappeared, they have left, nonetheless, a durable legacy on the surface of the Earth, allowing archaeologists to trace their forms in the contours of the terrain. Our view of the Greater Angkor area has changed considerably in recent years, moving from simple schematic overviews to detailed archaeological maps. The latter reveal a formally planned, densely inhabited urban core surrounded by an extensive network of low-density neighbourhoods, water-management systems, agricultural networks and transportation links to settlements around other major temple sites

Despite its importance as the location of one of the Angkor period's earliest capitals, the mountainous region of Phnom Kulen has, to date, received strikingly little attention. It is almost entirely missing from archaeological maps, except as a scatter of points denoting the remains of some brick temples. The history and geography of the area has amplified many of the problems of conducting archaeological survey and mapping in Cambodia: until recently, the site was remote, difficult to access and covered with dense vegetation. Furthermore, it was among the last bastions of the Khmer Rouge, who occupied the area from the early 1970s until the late 1990s. Dangerous remnants of war, such as land mines, remain a serious problem. For these reasons—as well as the absence of monumental remains on the scale of Angkor—Phnom Kulen has mostly escaped the attention of researchers.

Nonetheless, the area is crucial for understanding the historical trajectory of Angkor and the Khmer Empire, which dominated much of mainland Southeast Asia between the ninth and fifteenth centuries AD. It is the source of much of the water that flows into the vast hydraulic network of Angkor on the plain below, and Angkorian inscriptions suggest that the mountain plateau was the site of one of the capitals of Jayavarman II, whose eighth- to early ninth-century AD reign marks the beginning of the Angkor period. This would place the site among the first engineered landscapes of the era, offering key insights into the transition from the pre-Angkorian period, including innovations in urban planning, hydraulic engineering and sociopolitical organisation that would shape the course of the region's history for the next 500 years.

To address this lacuna in the archaeology of Angkor, first an extensive survey was undertaken on Phnom Kulen in order to understand the spatial and chronological dimensions of Angkor-period occupation. The development of archaeological maps has been enhanced considerably by the application of airborne laser scanning (lidar) techniques in two separate campaigns: the first in 2012, by the Khmer Archaeology LiDAR Consortium, and another in 2015, by the Cambodian Archaeological Lidar Initiative.

Background

The principal massif of the Kulen range, located 30km from major temples such as Angkor Wat, is an elongated plateau oriented north-west to south-east. Measuring 25km along its main axis and 15km at its widest point, the plateau rises abruptly to an average of 300–400m asl above the surrounding flat plain, with margins marked on all sides by steep escarpments (Figure 2). Its forest and permeable stone play an important role in the area's watershed: it is the source of all three of Angkor's main watercourses . The marked seasonality of the monsoon is attenuated somewhat by permanent water flows, forest cover and the relative altitude of the mountain. Together, these create a consistently humid microclimate. Soils are shallow, marginal and unsuited to intensive rice agriculture. Traditionally, slash-and-burn rice agriculture is practised here among the semi-evergreen Dipterocarp forest, an ecosystem that is rapidly disappearing despite the region's designation as a National Park.

The link between this massif and an Angkorian city referred to in Angkorian inscriptions as *Mahendrādri* or *Mahendraparvata* ('mountain of great Indra') was initially proposed at the beginning of the twentieth century , but proved difficult to confirm due to confusion about royal lineages and the construction sequences of the monuments. Eventually, Stern identified the temples of Phnom Kulen as dating to the ninth-century reign of Jayavarman II, and proposed that the royal city of Mahendraparvata would also be found on the massif. Although Stern surveyed the area, evidence for Mahendraparvata remained elusive. Nonetheless, his mission generated the first archaeological map of the massif, including the locations of numerous newly documented temples. Stern's map—comprising, essentially, a scatter of points in the jungle—would remain the definitive image of the area for decades to come.

The 1960s saw renewed interest in the region. Hansen (1969) and Boulbet (Boulbet & Dagens 1973; Boulbet 1979) added various elements to Stern's archaeological map, in particular water-control structures, dykes and other linear features, without necessarily adding support to the notion of an urban network. Aerial mapping campaigns of the Angkor region throughout the 1990s extended northward to the mountains, but with limited success. While radar imaging provided additional detail around the base of the mountain range, the dense foliage could not be penetrated, and Phnom Kulen remained a lacuna on archaeological maps (Evans *et al.* 2007).

More recently, major advances have been made following ground investigations (Chevance 2011, 2013, 2014, 2015), which have identified certain elements characteristic of urban form, and, specifically, of an Angkorian capital city. Notable among them is the temple of Rong Chen, the distinctive pyramidal shape of which is typical of other state temples located at the heart of pre-Angkorian and Angkorian urban areas. Further compelling evidence is the identification of a royal palace site close to Rong Chen, at the site of Banteay (Chevance 2015). Its distinctive rectangular shape, size, orientation and

architectural remains indicate that it was the centre of power of a royal capital. This was confirmed through excavation, which also provided radiocarbon dates consistent with the reign of Jayavarman II in AD 770–835. Simultaneously, however, this work further underscored the limitations of conventional survey and mapping techniques in areas of tropical forest, and a coherent vision of the city itself remained elusive. It was in this context that airborne laser scanning was deployed in order to exploit its unique ability to ‘see through’ vegetation and provide high-resolution models of the forest floor (Evans *et al.* 2013). Here, we confirm the hypothesis, based on this accumulated body of evidence, that Mahendraparvata—the eighth- to ninth-century AD capital of the Khmer Empire—was located on the Phnom Kulen massif.

Archaeologists had to harness laser technology to locate the mysterious city, which is nestled in the Phnom Kulen mountains of Northern Cambodia, according to a paper published in the journal *Antiquity*. Inscriptional evidence suggests that the Phnom Kulen plateau to the north-east of Angkor in Cambodia was the location of *Mahendraparvata*—an early Angkorian capital city and one of the first capitals of the Khmer Empire (ninth to fifteenth centuries AD). To date, however, archaeological evidence has been limited to a scatter of small and apparently isolated shrines. Here, the authors combine airborne laser scanning with ground-based survey to define an extended urban network dating from the ninth century AD, which they identify as Mahendraparvata. This research yields new and important insights into the emergence of Angkorian urban areas.

But now, an ancient settlement, known as the ‘lost city’ of Cambodia, has been rediscovered by scientists using aerial mapping after remaining hidden in dense jungle for centuries. “Despite knowing that the Phnom Kulen mountains likely hid traces of a Khmer capital city, archaeologists have had difficulty accessing the region,” the researchers explain in a statement accompanying the paper. “The mountains are covered in dense vegetation and they were one of the last strongholds of Khmer Rouge guerillas until the 1990s – land mines and unexploded ordnance continue to pose a threat to communities living and working in the mountains, and complicate archaeological research.”

Combining airborne laser scans and ground surveys: By combining airborne laser scans and ground surveys, researchers were able to locate the city. Previously, the only evidence of Mahendraparvata was a small number of isolated shrines. Experts harnessed LiDAR (Light Detection and Ranging) technology, which uses a laser to measure distances to the Earth’s surface and can prove extremely valuable to study what is hidden in areas with thick vegetation. LiDAR is also used extensively in other applications, including autonomous cars where it allows vehicles to have a continuous 360 degrees view.

Laid out on a grid basis, the researchers believe that they have found a number of the city's blocks. LiDAR also indicates that an "ambitious" hydraulic engineering project was started at Mahendraparvata, but never finished. "This meant that the water management system was not sufficient to support irrigated rice agriculture, which may suggest the city did not last long as a Khmer power center," the researchers said, in the statement. "Even though the reservoir at Mahendraparvata was not functional, it predated and may have inspired the vast artificial lakes that would become a defining feature of Angkor." In a collaboration between the EFEO, the Archeology and Development Foundation in the U.K., and the APSARA National Authority (a government agency responsible for protecting the Angkor region in Cambodia), researchers combined airborne laser scanning with ground surveys and excavations to weave a narrative of the development and demise of this ancient city. The technology, known as light detection and ranging, or lidar, creates maps of an area by having a plane shoot lasers at the ground and measure how much light is reflected back. From that information, researchers can figure out the distance from the lasers on the plane to solid objects between the vegetation on the ground. (For instance, a temple would measure as a shorter distance to the airborne laser than a road would.)

Evans' team combined lidar data it had gathered in 2012 and 2015 with digitized survey and excavation data gathered earlier. The researchers also combined this data with the nearly 600 newly documented features that archeologists found on the ground. Those features included ceramic material, as well as bricks and sandstone pedestals that typically indicate temple sites.

Experts also studied mysterious "mound fields" at the Mahendraparvata site. The fields consist of 366 individual mounds set out in geometric patterns and 15 groups. Ceramics and evidence of 10th-century A.D. construction were found at the mounds. "Although the purpose of the mounds remains unknown, it is likely that, whatever they were, the mounds were built later than the majority of Mahendraparvata," they explained, in the statement. The multi-year archaeological expedition to find Mahendraparvata was co-led by Damian Evans of University of Sydney and Jean-Baptiste Chevance of London's Archeology and Development Foundation. The team announced their initial findings in June 2013. A key feature of the expedition was its use of helicopter-mounted Lidar technology to scan the Phnom Kulen area and then map the city layout. The scanning phase involved seven days of helicopter operations. The Lidar results confirmed ground-based research by previous archaeologists. But, according to Chevance, before this they "didn't know how all the dots fitted, exactly how it all came together".

The ground phase of the expedition traversed goat tracks and watery bogs, the team having got to their starting point by motorbike. Hazards included landmines. They initially uncovered five new temples. Eventually, using the Lidar data, thirty previously unidentified temples were discovered. In addition

to the temples, their research showed the existence of an elaborate grid-like network of roads, dykes and ponds forming the city. Dr. Evans also noted that expedition imagery shows that the area became deforested, and he theorises that the impact of this, and water management issues, led to the civilisation's decline.¹

1. <https://www.cambridge.org/core/journals/antiquity/article/mahendraparvata-an-early-angkorperiod-capital-defined-through-airborne-laser-scanning-at-phnom-kulen/CAC3E93D6046CC27D862C1E333FD0713/core-reader>

Surrounded by dense jungle, the vast city was once the thriving capital of the ancient Khmer Empire. At one point, the population of Angkor may have been over 1 million people, according to LiveScience. The circumstances surrounding Angkor's demise have been debated for years. One theory suggested that aggression from neighboring states forced the city's abandonment in 1431. The expedition team have dated Mahendraparvata's origins to 802 AD. Thus the city predates Angkor Wat by about 350 years.

Ak Yum is an ancient temple in the Angkor region of Cambodia. Helen Jessup dates the temple to the 8th century, and states it is the oldest known example of "temple mountain" in Southeast Asia. It points way to Mahendraparvata. The origins and repair history of the temple are unclear. Stone carrying inscriptions, including one with a date corresponding to Saturday 10 June 674 AD during the reign of king Jayavarman I. The first structure on the site was a single-chamber brick sanctuary, probably constructed in the latter part of the 8th century. Later it was remade into a larger stepped pyramid structure, with a base approximately 100 meters square. The expansion probably took place in the early 9th Century during the reign of King Jayavarman II, who is widely recognized as the founder of the Khmer Empire. When the West Baray reservoir was built in the 11th Century, Ak Yum was partially buried by the southern dike. The site was excavated in the 1932 under the direction of archaeologist George



Ancient City of 'Mahendraparvata' Hidden Beneath Cambodian Jungle

Ancient stone inscriptions tell tales of a city called Mahendraparvata. The once-mighty metropolis was one of the first capitals of the Khmer empire, which ruled in Southeast Asia between the ninth and 15th centuries. It was long believed that the ancient city was hidden beneath thick vegetation on a Cambodian mountain, not far from the temple of Angkor Wat.

Now, thanks to an incredibly detailed map, researchers can "definitively" say that the ruins, overgrown by thick vegetation on the mountain of Phnom Kulen, are in fact from that 1,000-year-old city. The ancient city was never really lost, as Cambodians have been making religious pilgrimages to the site for hundreds of years.

"It's always been suspected that the city of Mahendraparvata that's talked about in the inscriptions was indeed somewhere up here in the mountains," said study co-author Damian Evans, a research fellow with the French School of the Far East (EFEO) in Paris. Now, "we can say for sure: Definitely, this is the place."

A well-planned city

One of the most remarkable revelations was that this city was nicely aligned in a massive grid that stretches across tens of square kilometers, Evans told Live Science. The city is a place "that someone sat down and planned and elaborated on a massive scale on top of this mountain," he said. It "is not something that we necessarily would expect from this period."

Mahendraparvata dates back to around the late eighth to early ninth century, which is centuries before archeologists thought such organized cities emerged in the Angkor area. At that time, urban development was typically "organic," without much state-level control or central planning, he said.

The city-dwellers used a unique and intricate water-management system. "Instead of building this reservoir with urban walls, as they did for famous reservoirs at Angkor, they tried to carve this one out of the natural bedrock," Evans said. These ancient inhabitants carved an enormous basin out of stone but left it half-complete for unknown reasons. *(See our chapter on Angkor a Hydraulic city in our Book DEVRAJA Part II, Second volume of our Trilogy. A corresponding research paper is also loaded on academia.edu and researchgate.net.)*

The ambitious project's unseen scale and layout provide "a kind of prototype for projects of infrastructural development and water management that would later become very typical of the Khmer empire and Angkor in particular," Evans said.

Surprisingly, there's no evidence that this massive cistern was connected to an irrigation system. That likely means one of two things: The city was left incomplete before the residents could figure out how to provide water for agriculture, or the lack of irrigation is one reason the city was never finished.

Mahendraparvata is "not located at an especially advantageous place for rice agriculture," which could explain why the city wasn't the capital for long, Evans said. Rice was the dominant agricultural crop of the greater Angkor region at the time. The city, from which King Jayavarman II supposedly declared himself the king of all the Khmer kings, was a capital only between the late eighth to early ninth centuries, according to inscriptions found.

Though most archaeologists don't attribute great historical accuracy to these inscriptions, this particular story matches the dating and lidar data from the study, Evans said.

"Now, having a very complete picture of the whole, greater Angkor area and a finalized map of the whole thing, we can start to do some pretty sophisticated modeling of things like population and growth over time," Evans said.

He said he hopes that future research will tease apart what happened to this ancient city between its birth, when it was bustling with new ideas, and its demise, when it disappeared among the dense leaves.

The city's origins date to the reign of Jayavarman II, considered the founder of the Khmer Empire. His reign was consecrated on the sacred mountain of Mahendraparvata, known as Phnom Kulen in contemporary Cambodian. The city he founded at Mahendraparvata was one of three capitals, or courts, of Jayavarman II's reign, the others being Amarendrapura and Hariharalaya.

The 1936 expedition of French archaeologist and art historian Philippe Stern had also explored the Phnom Kulen highlands. He discovered some previously unknown temples and Vishnu statues and described the area as the first true temple mountain. But the area, while being the source of rivers flowing south

to the Tonle Sap, was remote. Later in his reign, Jayavarman II moved to Hariharalaya where he died in 835 AD.

Methods

Aside from temples, urban areas in the Angkorian world were constructed principally of wood and other perishable materials, which creates obvious challenges for researchers seeking to identify elements of past urban forms. Since the 1990s, however, a number of studies have confirmed that interpretation of microtopographic variations is a practical method for identifying and mapping remnant traces of the built environment, such as mounds, ponds, fields, walls, roads and canals. One earlier acquisition of Phnom Kulen lidar data took place in 2012 using methods detailed by Evans *et al.* Our target coverage area included the principal archaeological features described above, covering 30km²; by processing data collected at the ends of flight lines, a total of ~37km² was achieved. The second acquisition took place in 2015 using methods described by Evans and covered the entire mountain range (including overlapping coverage of the 2012 area) with a total area of 975km²

Between 2012 and 2017, a total of 598 newly documented features were visited on the ground. Topographic variation was observed to assess concordance with the lidar elevation model. We also documented the presence of surface archaeological remains, which comprised mostly ceramic material and, less frequently, bricks or sandstone pedestals that typically indicate temple sites. In rare cases, field investigations were required to eliminate natural geological formations (in particular, rocky outcrops) and bomb craters from our analysis. Finally, the geodatabase was updated and modified to incorporate our field investigations and produce archaeological maps of the plateau.

An urban network

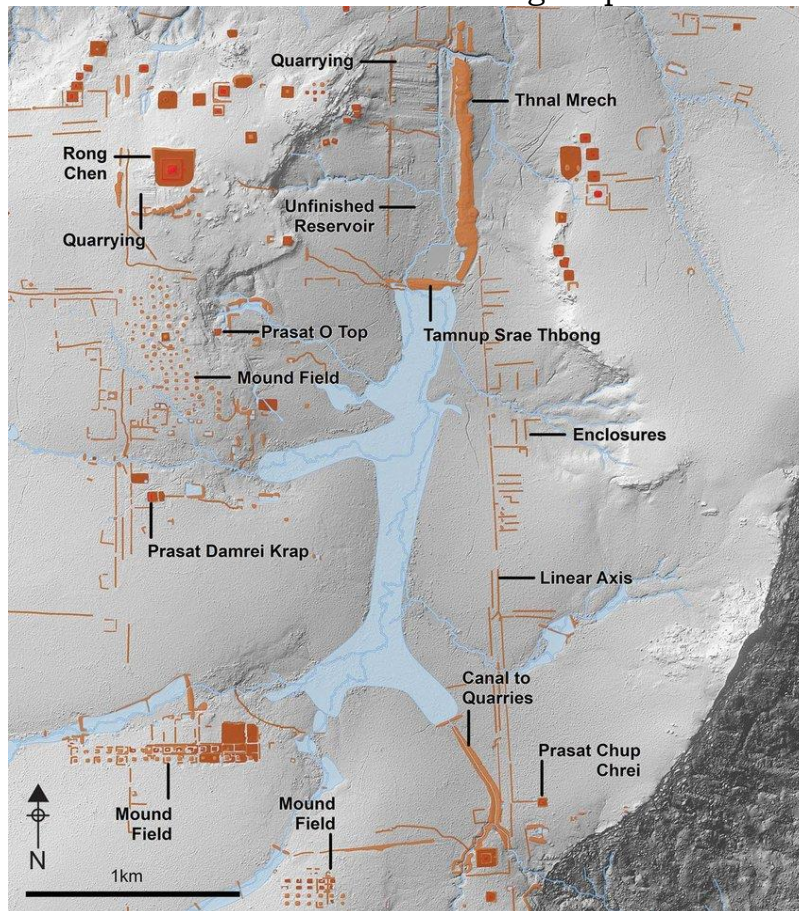
The most striking result of the lidar survey is the discovery of a framework of linear axes, oriented roughly to cardinal directions and spanning much of the southern area of the plateau which consist of one, two or sometimes three parallel linear topographic anomalies, which are subtle and difficult to observe on the ground. Most of the elements we mapped in Phnom Kulen are aligned with the major axes, although it is difficult to read too much into this, given the general preference for cardinal orientation in the Angkorian world. On the other hand, Angkorian temples conventionally face towards the east, and the newly discovered axes help to explain the anomalous westward orientation of several Phnom Kulen temples. These actually open towards the axes and, in the case of westward-facing Prasat Chup Crei, the temple is even linked directly to an axis by a causeway.

The grid on Phnom Kulen does not appear to be directly connected to broader, regional transportation or communication networks. The well-known stone stairway of Denh Cho (or Phleu Cèrè) that scales the Phnom Kulen escarpment

is considered to be the main access point between Jayavarman II's capital and the Angkor plains below. The lidar imagery, however, reveals that this stairway is located to the north-west of the Mahendraparvata urban framework. Instead, Phleu Cère leads to the tenth- to twelfth-century AD Preah Ang Thom group on Phnom Kulen which is substantially later than the main Mahendraparvata complex. The lidar data therefore offer new insights into the spatio-temporal complexity of Phnom Kulen, to which we return below.

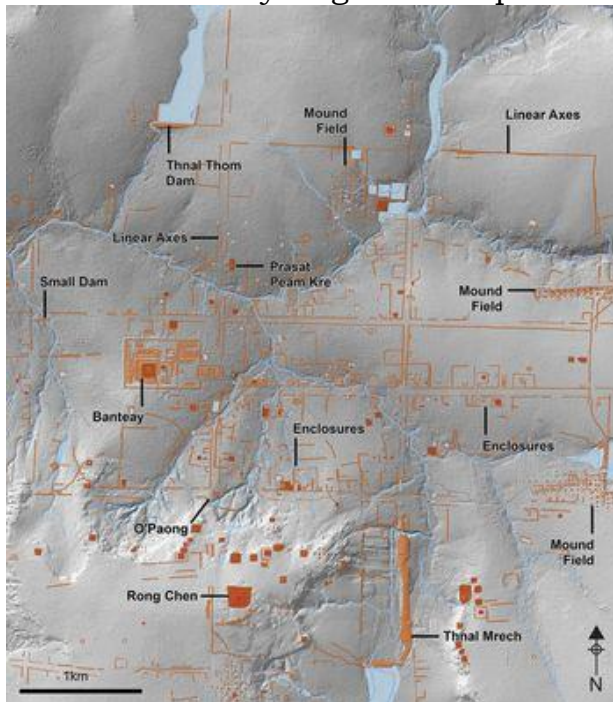
Hydraulic infrastructure

Exploration and mapping by Stern in the 1930s revealed the existence of Tamnup Srae Thbong and Thnal Mrech—two massive earthen dykes on Phnom Kulen which join to form an L-shape. Additionally, surveys in the 1960s identified and mapped a system of smaller earthen dams built across river valleys. These hydraulic features are clearly recognisable in the lidar imagery, and we were able to revise existing maps to increase clarity and precision.



The main natural feature in the southern part of the plateau is a broad, flat, north-south valley. Here, we see evidence of an ambitious project formalising the natural valley into a rectangular water-storage feature. The lidar data show that the L-shaped configuration of Tamnup Srae Thbong and Thnal Mrech form part of a huge, unfinished north-south reservoir, that would have covered an area of $1050 \times 330\text{m}$. The two earthen dykes form its southern and eastern

walls, and there is evidence for the removal of bedrock to deepen the reservoir and straighten its western and northern walls. The lidar data reveal a very distinctive pattern of striations in the valley, where soil was dug out of the ground systematically, and then piled up to form the dykes of the reservoir. Had it been finished, the reservoir would have retained water flowing through the valley, forming a rectangular body of water inundating over 35ha. This reservoir would have been precisely integrated into the engineered landscape of Phnom Kulen. Its eastern wall is built into one of the major north–south axes; the temple of Rong Chen sits exactly on its east–west centre line; and to the east of the reservoir, a series of westward-facing temples also sit on that centre line. This arrangement recalls the pyramid-reservoir-temple configuration at the tenth-century Angkorian capital at Koh Ker .

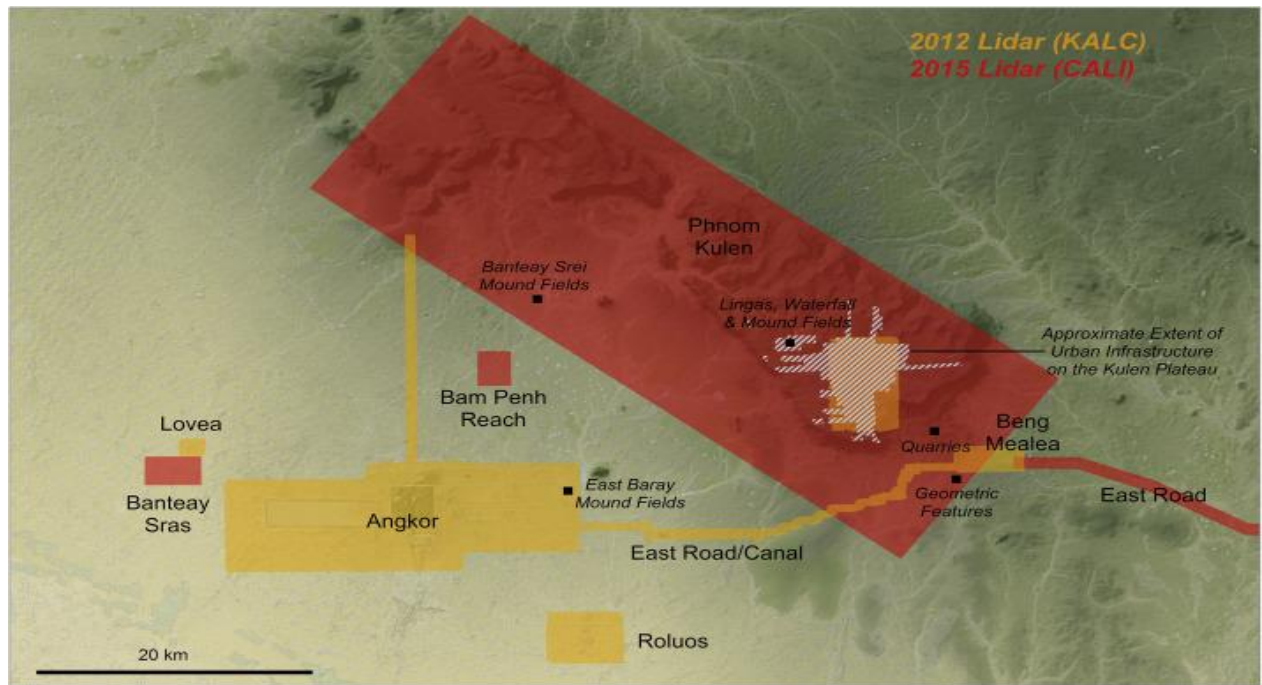


The lidar elevation data have also clarified the structure and function of a channel located at the southernmost point of the valley. Here, the natural direction of flow is to the north, but this 1km-long structure instead channels water to the south. We also found evidence here for water-control mechanisms, such as sluice gates, carved into the stone. These structures divert water over the escarpment and down into the area between Phnom Kulen and Beng Mealea, from where sandstone blocks were quarried and transported down canals to build the temples of Angkor (Figure 1). Lidar imaging has revealed the full extent of quarries in this area, along with dykes for controlling the water required for moving the stones (Evans 2016). We can now see evidence that engineering works on top of the plateau also played a role in this sophisticated hydraulic system.

Habitation

Although they found little evidence for the type of mound-and-pond-based habitation patterns typical of Angkorian urbanism, nonetheless identified a distinctive topographic spatial patterning associated with the main axes—and in particular with the central grid—that we interpret as evidence for habitation. Of particular significance are the presence of numerous earthen enclosures that align roughly with, and often abut, the main axes. These small embankments, of decimetre scale in height and in cross-section, subdivide what we interpret as square ‘city blocks’ with sides of 1.5km in length into an intricate and extensive network of smaller plots with areas normally in the range of 1–4ha. These plots are somewhat haphazard in their layout, with inconsistent sizes and orientations. This may represent more organic developments that emerged alongside, and out of, the more formal axes of the central grid, without reaching very far into the interior of the ‘city blocks’. A few ponds, mounds and temple sites are scattered throughout. Archaeological excavations undertaken in 2014 and 2016 by the Archaeology and Development Foundation (ADF) confirmed habitation, including organic layers containing eighth- to ninth-century AD ceramics.

Mound fields



mound fields’: On Phnom Kulen we found a remarkable collection of ‘mound fields’: cardinally oriented arrays of earthen mounds that have been previously reported at two locations down in the Angkor plain). 15 distinct groups on the Phnom Kulen plateau, were identified comprising of 366 individual mounds and representing one of the most significant concentration of these features so far identified in the Angkorian world. Excavations in Phnom Kulen, yielded ceramics and evidence for construction radiocarbon-dated to the tenth century

AD pointing towards Mahendraparvata's original spatial structure, and may, therefore, substantially post-date the initial period of major development.

Discussion

Analysis and interpretation of the lidar data has revealed thousands of features of archaeological interest, extending across an area of 40–50km². This immediately raises questions concerning chronology. The first point to note is that the grid of major axes provides the overall framework upon which other patterns of habitation are based and elaborated. Enclosures often have at least one wall aligned with or abutting a major axis, yet no enclosure intrudes upon or interrupts one of the axes, suggesting a coherent overall design. Furthermore, although we found hundreds of ponds within the central area, only two of them interrupt the course of the major axes; the other ponds are scattered within the city blocks. We see no evidence of earlier constructions beneath or within the major axes, or any other indication that this vast, formal grid was superimposed upon a pre-existing settlement. All of this evidence suggests that the central grid was laid out before, or during, the elaboration of the habitation network, and that the two systems functioned contemporaneously.

The network of Phnom Kulen therefore mostly developed according to an overall plan, and the major axes, including the largest earthen dams, were the earliest and most fundamental elements of that design. As noted, the monumental architecture of Phnom Kulen also conforms neatly to that spatial framework; as those temples are known to date to the late eighth- to early ninth-century AD reign of Jayavarman II, we interpret this as evidence of a contemporaneously functioning, formally planned urban network. This functional and chronological interpretation is consistently supported by field observations and, in particular, ceramic material and radiocarbon dates from securely stratified contexts.

Importantly, two temples in Phnom Kulen that have long been thought to pre-date the reign of Jayavarman II—Prasat Damrei Krap and Prasat O Top are conspicuously out of alignment with the urban grid (Figure 6). Notable among the other misaligned features are the ‘mound fields’ or gridded arrays of mounds, which we believe probably date from the tenth century AD. This suggests a long and complex history for Mahendraparvata following its late eighth- to early ninth-century tenure as a capital, involving periods of renovation and transformation. These, in turn, accord with inscriptions that attest to the continued use of Phnom Kulen as a site of worship and pilgrimage throughout the Angkor period, and also with local palaeobotanical records suggesting extensive and intensive human land use from the eighth to twelfth centuries AD .

Rice-field walls and occupation mounds: Mahendraparvata is also notable for its lack of rice-field walls and occupation mounds, compared with the

lowland areas of Greater Angkor. As these are both Khmer adaptations to floodplain environments, it is unsurprising that they are not abundant in the gently rolling upland topography of Phnom Kulen. The tenth-century AD capital of Koh Ker, 50km to the north-east of Phnom Kulen, has a similar topography, and occupation mounds are also largely absent from the archaeological record there, while relict rice-field walls are scarce (Evans 2010). Epigraphia and other evidence also confirms that Koh Ker was both an urban centre and a capital of empire. While achievements in hydraulic engineering are relatively modest at Mahendraparvata, lidar imagery clearly shows that an ambitious programme was initiated, but never completed. Even if it was never functional, the reservoir at Mahendraparvata was a prototype for the vast artificial lakes that would become a defining feature of later Angkor.

Mahendraparvata marks an important point of departure, and appears to represent the first large-scale 'grid city' elaborated in the Khmer world. For a number of reasons, Mahendraparvata therefore represents an important milestone in the development of urban form in the region. Prior to the site's construction in the eighth century AD, the evidence shows that settlement patterns in the Angkor region comprised small, loosely structured urban areas that lacked any formal grid, had no clear boundaries and appear to have developed organically without a coherent plan. Beyond the Angkor region, a handful of centres show evidence of enclosing walls; for example, at the sixth- to eighth-century AD site of Sambor Prei Kuk. But these are much smaller in scale than at Mahendraparvata, and contain no internal grids.

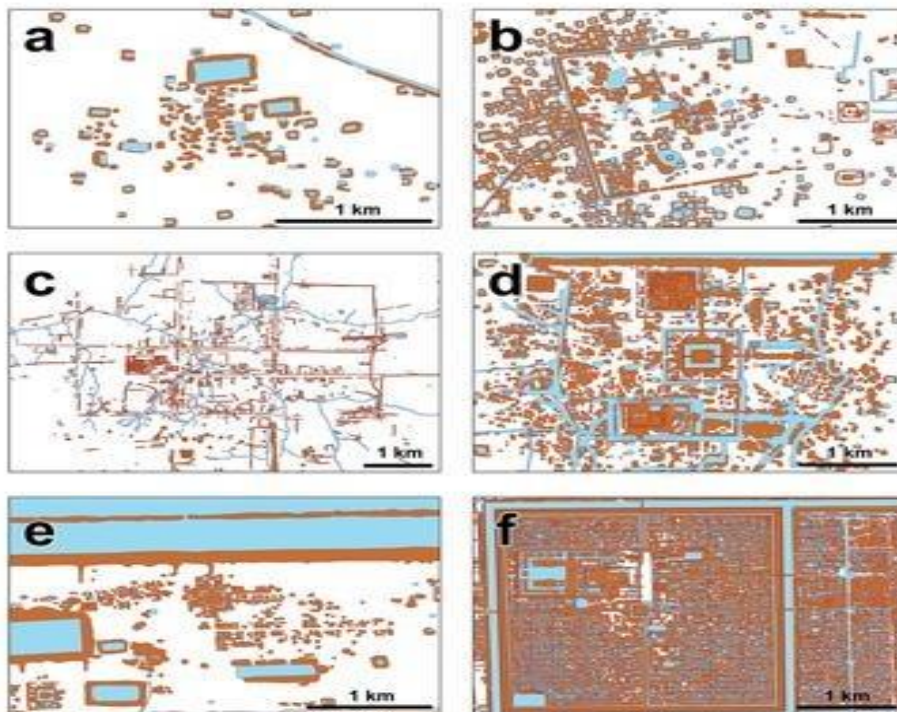


Figure : The development of urban form in the Khmer world: a) pre-Angkorian ‘open settlements’ of the sixth to eighth centuries AD; b) the pre-Angkorian capital of Sambor Prei Kuk, sixth to eighth centuries AD, with ‘enclosure’ wall; c) the gridded city of Mahendraparvata, eighth to ninth centuries AD; d) the early Angkorian capital of Hariharalaya, ninth century AD; e) the capital of Rajendravarmān at Angkor, tenth century AD; f) the gridded city of Angkor Thom, eleventh to thirteenth centuries AD (figure by the authors). It would be some time before such a design would be fully realised again in the Angkor region (Figure 1). The ninth-century AD city of Hariharalaya—the capital immediately following Mahendraparvata—contains a monumental core but, overall, evinces an organic layout typical of the early Angkorian ‘open cities’ (Evans 2010; Pottier 2012). It is only in the tenth and eleventh centuries AD that the massive linear axes and internal frameworks of cities appear again in the Angkor region, and not until the twelfth century that we have unambiguous evidence for gridded cities achieved on the same scale as Mahendraparvata (Evans 2016).



Hence, the urban network revealed by lidar and described here seems to form an enormous and remarkably early experiment in formal urban planning. The urban model that first developed on this mountain plateau, although sparsely inhabited at the time and not widely adopted straight away, would eventually be adapted to the low-lying floodplains of Angkor, and become a prototype for high-density urban centres at the height of the Khmer Empire.

Conclusions

The eighth- to ninth-century AD capital of the Khmer Empire was located on the Phnom Kulen massif, the lidar data, supported by additional evidence from

archaeological survey and excavation, are consistent with this interpretation. There is evidence of a centrally planned urban area, spanning ~40–50km² of the plateau. This comprises a network of major thoroughfares that divide a central zone into a city grid; a system of smaller-scale land parcelling that subdivides city blocks within that grid; a distribution of small shrines, mounds and ponds; a large-scale water-management system, consisting of dams and a major, unfinished reservoir; and finally, a distinctive spatial arrangement of a royal palace, state pyramid-temple and other infrastructural elements that are consistent with—and unique to—all other known Khmer Empire capitals.

Mahendraparvata was the location from which Jayavarman II ruled over the early ninth-century lands of the Khmer, and is consistent with the definition of a ‘capital’. The existence of a palace precinct, a network of thoroughfares and local shrines and neighbourhoods indicate that a royal court was located here and supported by a substantial population of specialised ritual, administrative and other staff drawn from a broader community inhabiting an extensive, well-defined, built-up area. This area was clearly *not rural* in character, as it has no identifiable agricultural systems; furthermore, its extensive system of parcelled neighbourhoods indicate that it was not merely a vacant ceremonial centre. There is evidence of a large urban area with an elaborate system of hydraulic infrastructure, which, contrary to the prevailing ‘hydraulic city’ theory concerning the rise of Angkor—seems not to be designed for irrigated rice agriculture. As at Koh Ker, however, the inadequacy of the water-management system for intensive rice agriculture at Mahendraparvata could either be seen as an argument against the ‘hydraulic city’ hypothesis, or, alternatively, as an explanation for the ephemeral nature of Mahendraparvata as the seat of power. The new map of Mahendraparvata is also relevant to debates about the development of urban form in the Khmer context. Previous work on urbanism at Angkor has noted two distinct forms: formally planned, densely inhabited urban centres, characterised by city grids with spaces constrained by walls and enclosures; and beyond that, low-density, mixed urban-agrarian landscapes with occasional nodes of high-density occupation..

Mahendraparvata combines features of both, while missing many other elements. It has an extended city grid, but without any attempt to define a central area with a wall or moat; the central grid does not appear to have been densely inhabited; and there is little evidence for intensive agricultural activity or a broader network of low-density occupation revolving around fields and ponds. Hence, while Mahendraparvata is immediately recognisable as Angkorian, and identifiably ‘urban’, it is totally unique in the Khmer world in its development of urban form. We note also that the urban network of Phnom Kulen is embedded within the fabric of Greater Angkor (Figure 1), and remained so for centuries. Yet its unique morphology remained intact, even as other parts of that settlement complex developed along distinctly different trajectories (Figure 1). Consistent with other recent work on tropical urbanism in the Khmer and the Maya homelands, the landscape-scale perspective afforded by lidar compels us to revisit conventional notions of urban

environments as neatly defined, well-delineated and densely inhabited spaces, and to consider them instead as components of a messy and complex continuum of urban and rural space.

It is clear that Mahendraparvata is the last component of that vast settlement complex to emerge from beneath the canopy. The work described here effectively draws to a close 150 years of archaeological mapping work in the Greater Angkor region and sets the stage for more sophisticated spatio-temporal modelling of urban form. By incorporating new data from Angkorian household archaeology a finer-grained demographic models could be constructed by the researchers and finally resolve basic questions concerning the extent and population of Angkor, and how that changed over the centuries.



Indra

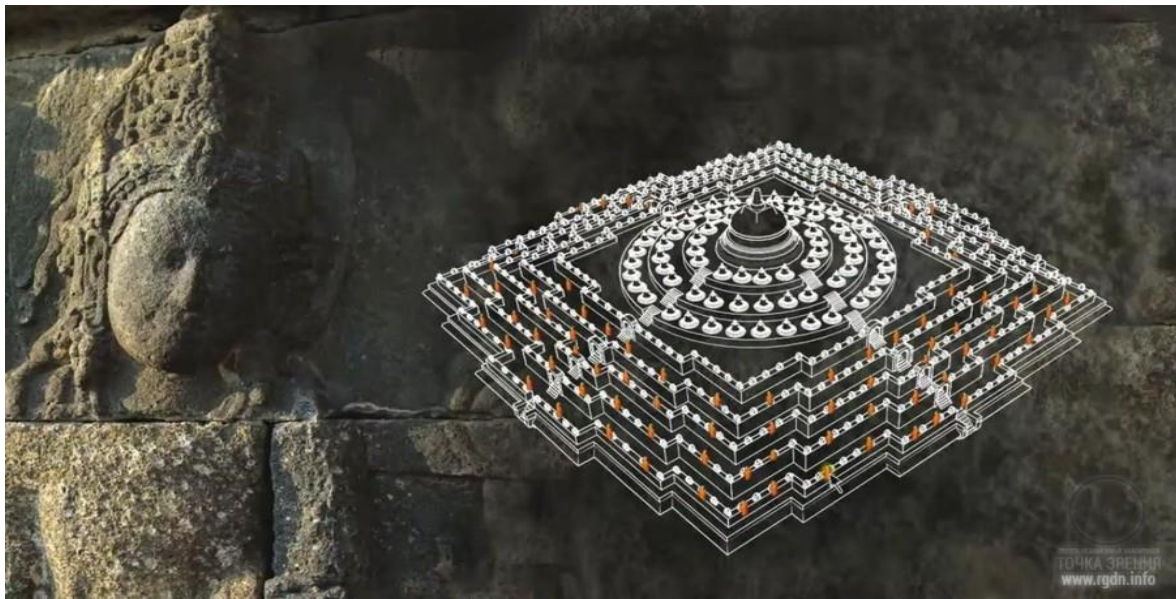
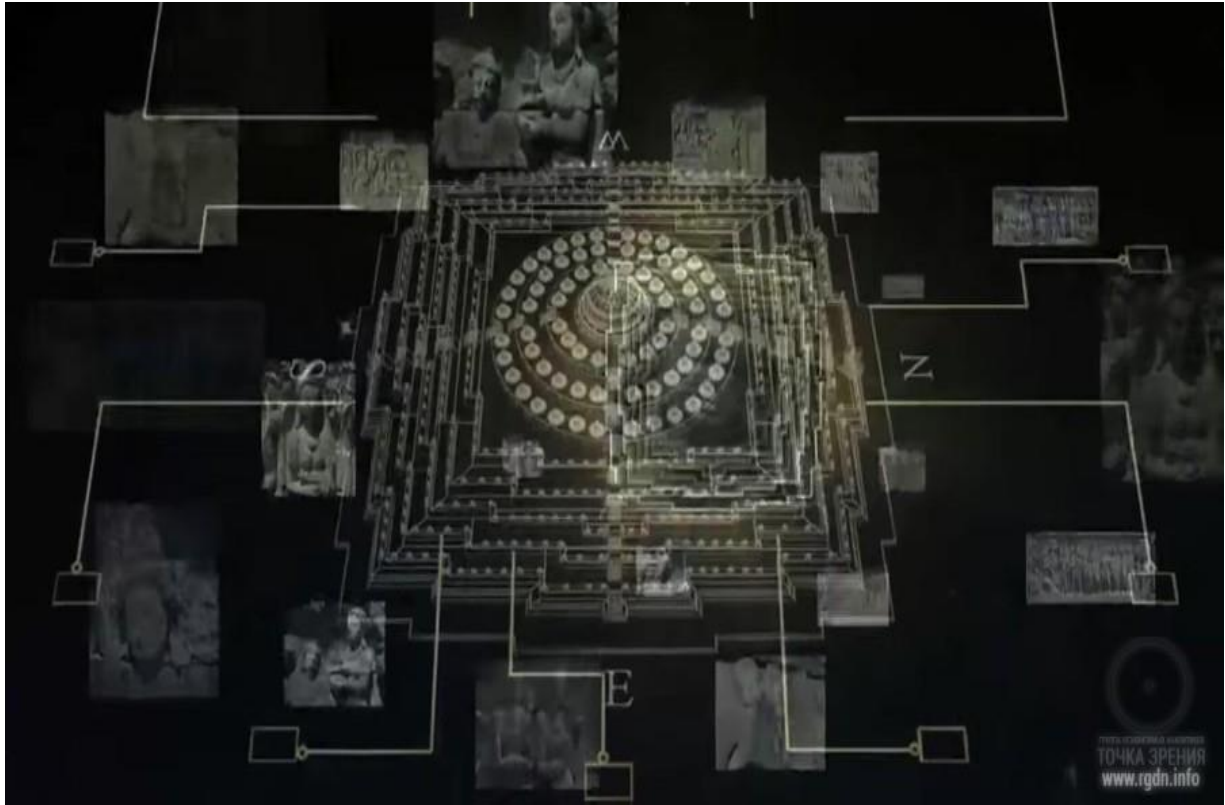
CHAPTER VII

The temple as a Mountain and also a MANDALA



Empires such as Bagan, Ayutthaya, Champa, Khmer, Srivijaya and Majapahit are known as "mandala" in this sense. Our temple is the second largest Buddhist temple in the world after Angkor Wat. Constructors erected this monument in the shape of a mandala and an opening Lotus flower on a square base (118 x 118 m) that smoothly turns into a circle.¹







Borobudur has eight tiers: the five lower ones are square, whereas the three upper ones are round. The shape of the building itself resembles a mandala and represents a scheme of the universe according to Buddhist beliefs, where heaven and earth are united. On the upper tier there are 72 small stupas around a big central stupa. Every stupa is bell-shaped. Inside the stupas, there are Buddha statues.

The temple complex contains 1,460 bas-reliefs with religious motifs. Relief panels describe the world of passions and the world of human perceptual development. Gradually ascending the helical serpentine road, a traveller perceives the world of matter and reaches the spiritual world.

The temple structure may be divided into three components:

- the temple base,
- the temple summit.
- the temple body,

The temple base is 118 x 118 m in width and 4 m in height. It is made of smooth plates with three tiers and 20 corners. The temple body consists of five square platforms-tiers: the higher one ascends the smaller every next tier is. The very first platform of the “monument body” is located 7 metres away from the edge of the base. Every subsequent platform is shifted 2 metres relative to the previous platform. The temple summit consists of three rounded platforms, on which 72 small stupas and the main stupa in the centre are installed. The central stupa is the highest point of the monument, towering 35 metres above the temple foot. It represents a bell-shaped stupa, 7 metres in height, topping the huge pyramid.

1. The lowest level of the temple complex, called Kamadhatu, represents the world of passions. 160 images of sensory manifestations have not been preserved to nowadays – we know about the existence of those from ancient manuscripts only.

2. The second level – the five tiers called Rupadhatu – symbolizes the real world and contains religious themes. The entire history of Buddhism is reflected in sculptures and bas-reliefs. Here, there are 432 Buddha statues: 104 on the first and second terraces (each), 88 on the third terrace, 72 on the fourth, and 64 on the fifth.

3. The remarkable beauty is completed by the three upper rounded terraces. This is the Arupadhatu level. There are 32 stupas on the lowest terrace, 24 on the middle, and 16 on the upper. A natural-sized statue of Buddha is inside each of the stupas. The largest stupa – the symbol of eternity – finishes the building.

$32+24+16 = 72$: an interesting interpretation of the structure of the world.



10 th: The most interesting is the secret of the “tenth terrace”. It was discovered totally accidentally that bas-reliefs are carved under the ground on Borobudur base walls, just like on the six lower terraces of the stupa. About 1,500 square metres of valuable bas-reliefs have turned to be hidden under the ground. The lower tier of the bas-relief describes the afterlife, and we can assume this was the reason why human eyes were not supposed to see it. An enormous piece of work was deliberately concealed from people, since only all-seeing deities could admire the bas-reliefs.





There is an assumption that Borobudur was constructed in a shape of Buddha sitting on a Lotus flower. In 1949 geologists discovered deposits that were interpreted as the bottom of a lake. There is a probability that the temple complex was located on a lake. By the constructors' plan, the entire magnificence of the temple was above the lake surface, and Buddha statue crowned the entire structure.

Buddhist monks who were building Borobudur implemented the idea of “a bible in stone”, having left the knowledge to descendants for many centuries. Images on the walls told about Buddha's life. Following the way along the galleries, a person approached enlightenment. In order to read this textbook in stone, one needed to cover almost 5 km. Visitors covered the way to the very top of the temple, moving clockwise through all the eight tiers. Every platform represents a stage of education on the way of transition from the earthly plane to the heavenly plane.

At first sight, all statues of Buddha look alike, but there is a subtle difference between them in a certain position of Buddha's hands See Chapter44

Biggest Mandala in the world

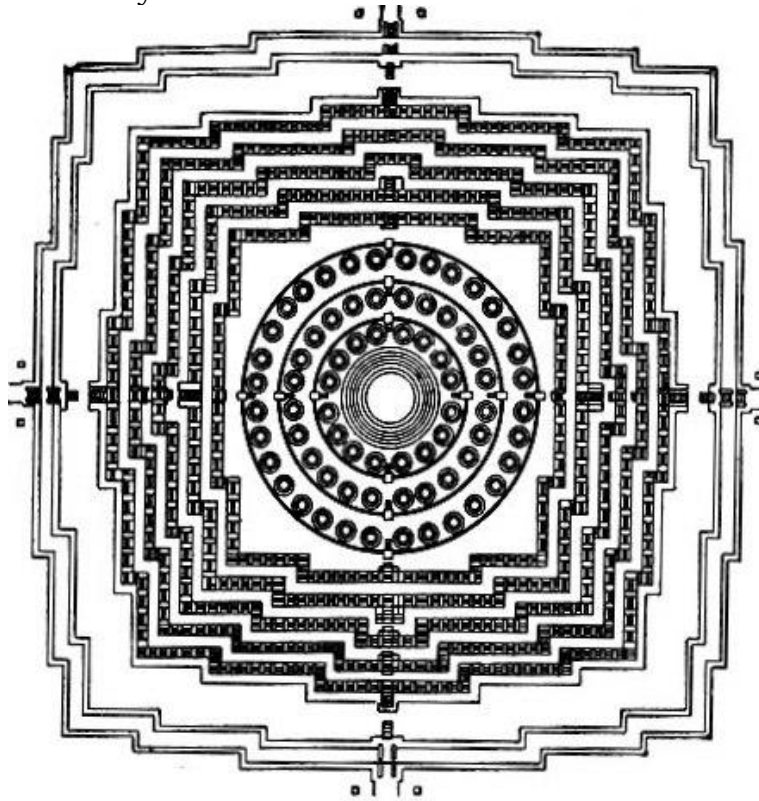
Borobudur is biggest Mandala in the world, when You see from sky You can see the Mandala, if You see further, You can see 3 Temple in one straight line (Mendut Temple, Pawon Temple and Borobudur Temple) betwen that, there is Elo river and Progo river and it was built at 8th century

Thus, most likely the architecture of the Borobudur is based on a Javanese variant of Buddhism, for if we look at the decoration in greater detail we obviously can confirm that its origin is based on Indian mythology and Buddhist iconography, however, we can also clearly see how these fundamental elements have been strongly combined with local (that is, Javanese) influences. The style in which the characters are depicted on the Borobudur differ greatly from the traditional Indian (Buddhist) iconography. The statues are depicted in other bodily postures, and with less refined details as they have in India; the Javanese obviously had a different idea of physical beauty and how this ought to be depicted, and that's why on the Borobudur the voluptuous curves of the body as familiar in Indian iconography are altered according to local Javanese perception of beauty (by which the female body is dressed in more clothes, and often can only be distinguished from the male body by the curves of their breasts).



If we consider the assumption of the Borobudur representing a *maṇḍala*, then the main *stūpa* signifies the final destination of the spiritual path, which is situated in the center of the cosmos. At this point one becomes united with the five transcendental Buddhas of the Formless Realm: Vairocana in the center, Akṣobhya in the East, Ratnasambhāva in the South, Amitābha in the West, and Amoghasiddhi in the North. This particular line-up corresponds with the *Vajradhātu Maṇḍala* and the *Garbhadhātu Maṇḍala* in Tibet and Nepal. One could gain access to the center of the cosmos by entering the *maṇḍala* from the outside, and gradually moving further inwards. In this context, a *maṇḍala* can be interpreted as a palace with four entrance gates at the four cardinal points of the Universe, stretching the entire cosmos. The palace is a metaphor for human manifestation in this world, which, by means of using the *maṇḍala* as a meditation object, guides the practitioner to the ultimate (spiritual)

goal in life. Visualization techniques such as these are still being practised in Vajrayāna Buddhism today.



Though the assumption of the Borobudur as a *maṇḍala* seems possible, this view remains yet impossible to prove. In spite of the previously mentioned similarities with the *maṇḍalas*, there are, however, also many differences. Beside the five transcendental Buddhas many other deities – both male and female – are often seen depicted in *maṇḍalas*. However, neither of these deities can be found on the Borobudur. Instead we do find many other depicted Buddhas on the Borobudur, but these do not display any of the features similar to other male or female deities. Thus, the other Buddhas do not function as a mere substitution for the various other deities (like guards, gatekeepers, goddesses of worship or Taras) commonly seen in *maṇḍalas*. Therefore, we may assume, that, as already had been suggested, the Borobudur displays a variant of Buddhism in the way it manifested in Java at the time of the reign of the Sailendra dynasty. This particular local variant of Buddhism was based on Indian influences and Mahāyāna Buddhism, which came to Java from China during the heydays of the Tang dynasty (618-906). The unique combination of these aspects would eventually become the Buddhism of Java. Then there also was the Hindu dynasty of Sanjaya that ruled on Java during the same period of the Sailendra dynasty. The fact that the Sanjaya shared their power with the Sailendra dynasty – for example, through donations for the construction of the Kalasan temple – illustrates, that, apart from its religious function, the Borobudur also formed an important expression of power.³

The role of royal patronage and religious institution⁴

The Borobudur monument combines the symbolic forms of the stupa (a Buddhist commemorative mound usually containing holy relics), the temple mountain (based on Mount Meru of Hindu mythology), and the mandala (a mystic Buddhist symbol of the universe, combining the square as earth and the circle as heaven). The style of Borobudur was influenced by Indian Gupta and post-Gupta art. In all the regions of Southeast Asia, the arts flourished under the patronage of the kings. About the time of the birth of Christ, tribal groups gradually organized themselves, after some years of settled life as rice cultivators, into city-kingdoms, or conglomerations of villages. A king was thus little more than a paramount tribal chieftain. Since the tribes had been accustomed to worshipping local spirits, the kings sought a new spirit that would be worshiped by the whole community.

One reason that the gods of Hinduism and Buddhism were so readily acceptable to Southeast Asia was this need for new national gods. The propagation of the new religions was the task of the kings, and consequently the period from the 1st to the 13th century was a great age of temple building all over Southeast Asia.

Architecture, sculpture, and painting on the temple walls were the arts that flourished. In the ancient empires of eastern Indochina and the islands, scholars of Sanskrit, the language of the sacred works of Hinduism, became part of the king's court, producing a local Sanskrit literature of their own. This literary activity was confined to the hereditary nobility and never reached the people, except in stories from the great Hindu epics *Mahabharata* and *Ramayana*. Because the Hindu religious writings in Sanskrit were beyond the reach of the common people, Hinduism had to be explained to them by Hindu stories of gods and demons and mighty men. On the other side of the peninsula, in the Pyu-Burmese empire of Prome, which flourished before the 8th century, there was no such development—first, because Hinduism was never widely accepted in Burma and, second, because the more open Burmese society developed neither the institution of a god-king nor that of a hereditary nobility. Although Pali scholars surrounded the king in later Pagan, Pali studies were pursued not at the court but at monasteries throughout the kingdom so that even the humblest villager had some faint contact with Pali teachings. While the courts of the kings in Cambodia and Java remained merely local centres of Sanskrit scholarship, Pagan became a centre of Pali learning for Buddhist monks and scholars even from other lands. As in the case of stories from the Indian epics, stories of the *Jatakas* (birth stories of the Buddha) were used to explain Buddhism to the common people, who could not read the scriptures written in Pali. Just as scenes from the great epics in carving or in fresco adorned the temples in Cambodia and Java, scenes from the *Jatakas* adorned the Pagan temples.

The patronage of the king and the religious enthusiasm of the common people could not have produced the great temples without the enormous wealth that suddenly became available in the region following the commercial expansion. With the Khmer and Javanese empires, the wealth was produced by a feudalistic society, and so the temples were built by the riches of the king and his nobles, combined with the compulsory labour of their peasants and slaves, who probably derived some aesthetic pleasure from their work because of their religious fervour. Nonetheless, their monuments, such as Borobudur, in Java, and Angkor Wat, in Cambodia, had an atmosphere of massive, all-conquering power. At Pagan, where wealth was shared by

the king, the royal officials, and the common people, the temples and the monasteries were built by all who had enough not only to pay the artisans their wages but also to guarantee their good health, comfort, and safety during the actual construction. The temples were dedicated for use by all monks and lay people as places of worship, meditation, and study, and the kings of Pagan did not build a single tomb for themselves. The Khmer temple of Angkor Wat and the Indonesian temple of Borobudur were tombs in that the ashes of the builders would be enshrined therein; the kings left stone statues representing them as gods for posterity to worship, whereas at Pagan there was only one statue of a king, and it depicted him on his knees with his hands raised in supplication to the Buddha. Consequently, the atmosphere that pervaded the temples of Pagan was one of joy and tranquillity.

The mandala is likened by some to a "floor plan of the universe." The type most familiar in the West is an intricately patterned painting on cloth or paper that often takes the general form of a circle within a square.

The word "mandala" comes from the Sanskrit verbal root "mand" (meaning to mark off, decorate, set off) and the Sanskrit suffix "la" (meaning circle, essence, sacred center). The mandala's symbolic power can be traced back to millennia-old roots in Indian temple architecture, which created sacred spaces linking the worshiper to the larger cosmos. In these temples, time and space were represented in a vocabulary of circles and squares. Similarly, a mandala helps believers visualize the universe and their place in it, often in relation to a specific deity found in the center of the image.

the evolution of the symbol has happened throughout Asia under the influence of various religious and artistic traditions over a period of several thousand years--some complex; others quite simple offering proof of the continuing vitality of the mandala and its role in Buddhist devotions. The mandala is of significant importance in both Hinduism and Buddhism. Both religions adopt the mandala as a peaceful and creative symbol. Hence, the speculative project finds a balance to build a memorial, which will signify peace and harmony of the Tamil community. The scale of the mandala here is monumental imposing the idea of spirituality and peace. Contemplating the mandala does not only provide insight into reality, the Cosmos but also communion with it. Mandala is the mystery that pervades all existence. Mandala alleviates suffering individually as well as in society. Contemplation can help overcome antagonism, conflict, stress and even war. Bindu as a symbolism is the beginning of the process that culminates into a mandala.

In Buddhism, the mandala is a ritual instrument, much like a mantra, used to assist meditation and concentration. Throughout history, these pictorial temples--intricate, two-dimensional, multi-colored patterns of concentric circles, squares, and other shapes--have signified the human need for wholeness, order, and balance. But while many people of the West accept mandalas as representative of a cosmic force, few understand they are meant to be blueprints as well. Indeed, a Tantric Buddhist meditator studies a two-dimensional mandala like an architect, building up in his mind the image of a palace encompassing the sacred principles of Buddhist philosophy.

MANDALA AND BUDDHIST TEMPLE ARCHITECTURE

The mandala in Buddhism is a cosmic model depicting Buddha's dwelling place as the center of the universe. Like in the Hindu temples, the structuring of the Buddhist temples has also been predominantly based on the spiritual model of the mandala.

Illustrations can be seen both in the form of two-dimensional mandalas as well as three-dimensional mandalas. The two-dimensional mandalas which are drawings composed of squares and concentric circles could be temporarily painted on various material or drawn on the ground or sand or other natural substances using coloured powder. Customs involving ceremonious gatherings along with prayers and chantings while drawing the mandalas are believed to alleviate difficulties and be of greater good to an individual or a community. These ceremonies could even last up to a number of days.

Three-dimensionally, the mandala diagram becomes a visual model of the built environment. In the Buddhist worship place, the central space is significant having a statue of the Buddha fronted by a worshipping space surrounded by walls. This is encircled by a circumambulating space. The circumambulation pathway is a space of psychological awakening before reaching the spiritual pinnacle

MANDALA AND HINDU TEMPLE ARCHITECTURE

Although there have been various arguments by authors of Indian temple architecture like Stella Kramrisch and Michael W. Meister about the applicability of the Vastu Purusha Mandala as a governing device for temple architecture, it is safe to say that for formulating the layout of the temple, the Vastu Purusha Mandala has been an imperative tool. Though the 8 x 8 grid or the Manduka Vastu Mandala has been used in various temples of Indian architecture, it is to be noted that regional differences have played a major influence on the workability of the mandala design throughout India.

Customarily, mandalas were spaces for the symbolic consciousness of universal theories which help in the awakening of the individual psyche. The mandalas can be thought of as diagrams that function as a cue to reach a contemplational state which is the primary aim of the tradition. The form of the temples that are based on the regulating lines of the mandala were meant to create spaces that bring about a “physical and spatial” communion between God and man.

A mandala (emphasis on first syllable; Sanskrit मण्डल, maṇḍala – literally "circle") is a geometric configuration of symbols with a very different application. In various spiritual traditions, mandalas may be employed for focusing attention of practitioners and adepts, as a spiritual guidance tool, for establishing a sacred space and as an aid to meditation and trance induction. It is used as a map (in Shintoism) in the Indian religions of Hinduism, Buddhism, Jainism or Japanese religion of Shintoism representing deities, or in the case of Shintoism, paradises, kami or actual shrines.

In New Age, the mandala is a diagram, chart or geometric pattern that represents the cosmos metaphysically or symbolically; a time-microcosm of the universe, but it originally meant to represent wholeness and a model for the organizational structure of life itself, a cosmic diagram that shows the relation to the infinite and the world that extends beyond and within minds and bodies.

The basic form of hinduism mandalas is a square with four gates containing a circle with a center point and it is called also a yantra. Each gate is in the general shape of a T. Mandalas often have radial balance.

A yantra is similar to a mandala, usually smaller and using a more limited colour palette. It may be a two- or three-dimensional geometric composition used in sadhanas, puja or meditative rituals, and may incorporate a mantra into its design. It is considered to represent the abode of the deity. Each yantra is unique and calls the deity into the presence of the practitioner through the elaborate symbolic

geometric designs. According to one scholar, "Yantras function as revelatory symbols of cosmic truths and as instructional charts of the spiritual aspect of human experience"

Many situate yantras as central focus points for Hindu tantric practice. Yantras are not representations, but are lived, experiential, nondual realities. As Khanna describes:

Despite its cosmic meanings a yantra is a reality lived. Because of the relationship that exists in the Tantras between the outer world (the macrocosm) and man's inner world (the microcosm), every symbol in a yantra is ambivalently resonant in inner-outer synthesis, and is associated with the subtle body and aspects of human consciousness.

Political meaning

The Rajamandala (or Raja-mandala; circle of states) was formulated by the Indian author Kautilya in his work on politics, the Arthashastra (written between 4th century BCE and 2nd century BCE). It describes circles of friendly and enemy states surrounding the king's state.

In historical, social and political sense, the term "mandala" is also employed to denote traditional Southeast Asian political formations (such as federation of kingdoms or vassalized states). It was adopted by 20th century Western historians from ancient Indian political discourse as a means of avoiding the term 'state' in the conventional sense. Not only did Southeast Asian polities not conform to Chinese and European views of a territorially defined state with fixed borders and a bureaucratic apparatus, but they diverged considerably in the opposite direction: the polity was defined by its centre rather than its boundaries, and it could be composed of numerous other tributary polities without undergoing administrative integration.

Mount Meru

A mandala can also represent the entire universe, which is traditionally depicted with Mount Meru as the axis mundi in the center, surrounded by the continents.

Wisdom and impermanence

In the mandala, the outer circle of fire usually symbolises wisdom. The ring of eight charnel grounds represents the Buddhist exhortation to be always mindful of death, and the impermanence with which samsara is suffused: "such locations were utilized in order to confront and to realize the transient nature of life". Described elsewhere: "within a flaming rainbow nimbus and encircled by a black ring of dorjes, the major outer ring depicts the eight great charnel grounds, to emphasize the dangerous nature of human life". Inside these rings lie the walls of the mandala palace itself, specifically a place populated by deities and Buddhas.

Five Buddhas

One well-known type of mandala is the mandala of the "Five Buddhas", archetypal Buddha forms embodying various aspects of enlightenment. Such Buddhas are depicted depending on the school of Buddhism, and even the specific purpose of the mandala. A common mandala of this type is that of the Five Wisdom Buddhas (a.k.a. Five Jinas), the

1. Buddhas Vairocana,
2. Aksobhya,
3. Ratnasambhava,
4. Amitabha and
5. Amoghasiddhi.

When paired with another mandala depicting the Five Wisdom Kings, this forms the Mandala of the Two Realms.

Practice

Mandalas are commonly used by tantric Buddhists as an aid to meditation.

The mandala is "a support for the meditating person", something to be repeatedly contemplated to the point of saturation, such that the image of the mandala becomes fully internalised in even the minutest detail and can then be summoned and contemplated at will as a clear and vivid visualized image. With every mandala comes what Tucci calls "its associated liturgy ... contained in texts known as tantras" instructing practitioners on how the mandala should be drawn, built and visualised, and indicating the mantras to be recited during its ritual use.

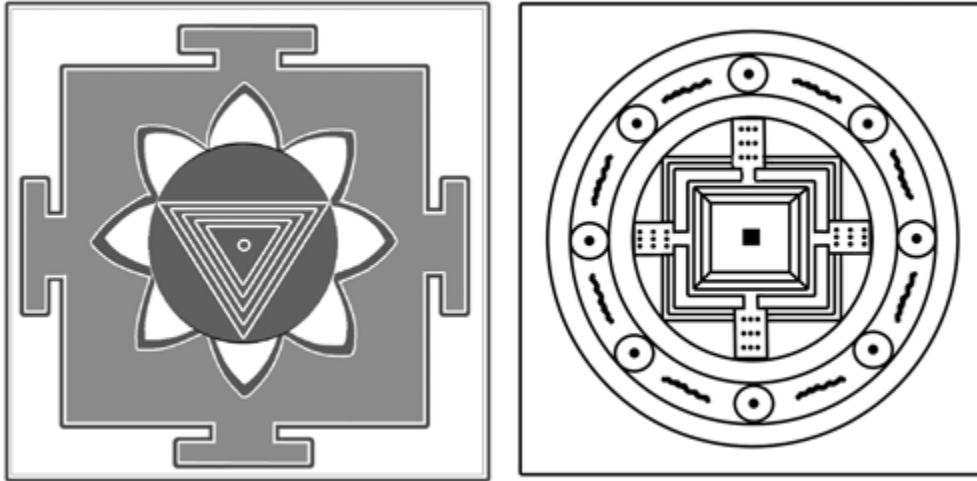
By visualizing "pure lands", one learns to understand experience itself as pure, and as the abode of enlightenment. The protection that we need, in this view, is from our own minds, as much as from external sources of confusion. In many tantric mandalas, this aspect of separation and protection from the outer samsaric world is depicted by "the four outer circles: the purifying fire of wisdom, the vajra circle, the circle with the eight tombs, the lotus circle". The ring of vajras forms a connected fence-like arrangement running around the perimeter of the outer mandala circle.

As a meditation on impermanence (a central teaching of Buddhism), after days or weeks of creating the intricate pattern of a sand mandala, the sand is brushed together into a pile and spilled into a body of running water to spread the blessings of the mandala. External ritual and internal sadhana form an indistinguishable whole, and this unity finds its most pregnant expression in the form of the mandala, the sacred enclosure consisting of concentric squares and circles drawn on the ground and representing that adamant plane of being on which the aspirant to Buddha hood wishes to establish himself. The unfolding of the tantric ritual depends on the mandala; and where a material mandala is not employed, the adept proceeds to construct one mentally in the course of his meditation."

Conclusions:

1. Borobudur in its base is a regular square with 118-m sides.
2. Such layout is used in meditative practices of Hinduism and Buddhism to intensify processes of inner concentration during meditation.
3. The numbers 7, 72. were applied in the temple design and construction, which evidences the availability of relevant knowledge at that time.
4. No wonder, the temple complex is under UNESCO protection, i.e. it is not available for further studies.
5. If we look at Borobudur from above, we can see it represents a complete mandala.
6. The temple has 8 tiers: 5 square and 3 round ones. On the upper tier, there is the large stupa – a bell-shaped monument with a statue of Buddha inside.
7. Borobudur is situated approximately 2,439.85 km (1,516.05 miles) away from Angkor Wat.
8. If we look at mutual disposition of some ancient religious sites from the North Pole, interesting correlations may be observed.
9. At the upper tier there are 72 small bell-shaped, stupa-like towers located around the big central tower.

10. Between Chandi Mendut and Borobudur there is the small Chandi Pavon – at a distance of approximately 1,150 metres away from Mendut and 1,750 metres away from Borobudur. Disposition of the structures complies with the golden ratio.



A mandala and a yantra

11. Mandala in the form of a circle with an indication of a square and a point in the centre, and a four-sided pyramid with six steps and fourfold division;

12. Kali Yantra (translated from Sanskrit, “kala” means “time”; this word originates from the Indo-European root that means spinning; a word that is close in its meaning in Russian is “kolo”); in Hindu mythology it means cyclical creations and destructions of the Universe, rotation of time in the concept of rebirth of the Soul and of a subject of fate.

REFERENCE

1. https://rgdn.info/en/borobodur._buddiyskaya_stupa

2. *See Chapter 4*

3. <https://www.indomagic.com/articles/art-material-culture/architecture/architecture-of-borobodur-temple/>

4. <https://www.britannica.com/art/Southeast-Asian-arts/Indigenous-traditions>

CHAPTER VIII

The Temple Mountain is built as a Stepped pyramid



TEMPLE MOUNTAIN IS AN IMPRESSIVE TERM

When I first heard the term Temple Mountain, I was impressed. We say –“Mountain of a Man” conjuring up images of a massive physical entity. Similarly, the term temple mountain has been coined by us to characterize a huge entity. In his article THE ANKOREAN TEMPLE MOUNTAIN, Z. Thierry says:-
(Zephir, .Thierry" *The Angkorean Temple-Mountain*" *Expedition Magazine* 37.3 (1995): n. pag. *Expedition Magazine*. Penn Museum, 1995 Web. 22 Sep 2021)

“In Cambodia, in the classic Khmer architecture of the Angkorean period, we find a temple type in which the sanctuary is built atop a stepped pyramid. Nineteenth century archaeologists called these “temple- mountains.” Each important sovereign was apparently obliged to build one in order to establish his power (see Stern 1954).

Let us explore this architectural expression of royal eminence through three of its aspects: diversity, evolution, and permanence.

Diversity: the Symbolism of the Temple-Mountain

In the Indian religious context, a sanctuary functions primarily as the terrestrial dwelling place of the gods, the place from which they will be able to provide aid and prosperity to humankind. Many countries of Southeast Asia were under Indian influence; each resolved in its own way the problem of creating a divine residence in the world of human beings. Generally, architects and builders based the construction of their sanctuaries on strict religious texts (unfortunately, we have none from ancient Cambodia). To the rules prescribed by these texts were added numerous others relating to astronomy, geomancy, or numerology, the meanings of which are often lost today. Our lack of knowledge of almost everything that guided the creation of the sanctuaries makes it difficult to understand them and to explain their symbolism.

In Cambodia, however, the study of local ancient epigraphy has furnished a variety of insights into the symbolism of religious architecture. In the light of some of these inscriptions, we can make a connection between Mount Meru, the center and axis of the universe in Indian cosmography, and certain temple-mountains of Angkor, the ancient Khmer capital. These structures provide an image, a kind of representation of Mount Meru on a human scale. The best known example is the sanctuary built around A.D. 906 on the top of Phnom Bakheng, the precise center of Yasodharapura, Angkor's first capital (Fig. 2). In addition to being constructed on one of the rare hills (*phnom* in Khmer) of the region, the monument was conceived as a square pyramid with five levels. Locating the pyramid on a natural hill at the geometric center of the royal city underlines the symbolic identification of the monument, center and axis of the city, with Mount Meru, center and axis of the universe.

In fact, the temple of Phnom Bakheng restates, with much greater complexity, the symbolic principles expressed earlier at the temple of the Bakong, founded in A.D. 881. At the Bakong, the summit of the five-level pyramid is occupied by a single sanctuary tower, whereas 5 towers arranged in a quincunx (a square of 4 towers with a fifth in the center) occupy the summit of Phnom Eakheng. Again, 12 temple annexes occupy the fourth level of the Eakong, but at Phnom Bakheng these 12 annexes appear on each of the five levels. Finally, only 8 large brick sanctuary towers are distributed at the foot of the Eakong, whereas 44 comparable towers ring the base of the Phnom Bakheng pyramid.

The temple-mountains of the Eakong and the Eakheng seem to suggest similar symbolic considerations in their main features, although those of the latter are more lavish. But the interpretation of the other temple-mountains at the Angkor site is different, at least in part. No temple-mountain of Angkor is truly comparable to another. Contrast the simplicity of the early temple of Eaksei Chamkrong (Fig. 3) with the immense complexity of the Bayon (Fig. 4). Eaksei Chamkrong was founded under the reign of Harsavarman I as the representation of Mount Kai lasa, private domain of the god Siva; the Eayon was the state temple of Jayavarman VII in which secular symbolic Hindu principles and new Mahayana conceptions from the reign of the founding king were unified.

If there was any continuity in the function of the temple-mountain, it was above all as the seat of the protective divinity of the realm. In addition to personal prestige and the exaltation of his chosen divinity (usually the god Siva), each builder had in mind special concerns such as his ancestral cult or that of the royal person. His successors did not necessarily care about these concerns, at least not in the same way.

What we know about temple-mountains at the present time, therefore, seems to confound any attempt at analysis based on firm, well-established principles of continuity. It is better to regard each of these creations of Khmer architectural genius as the specific expression of changing religious principles at a particular period, in response to rules that were probably evolving from one reign to another.

Evolution: Long Rooms into Galleries

While the symbolism of temple-mountains does not follow a clear evolutionary line nor fit into an unchanging tradition, their architectural conception is a different story. It is

not possible here to cover all aspects of the rigorous evolution of their layout nor the diverse structures they comprise. Instead, I shall take one particularly explicit example: the transformation of long rooms into galleries, as evidenced in the concrete record of the construction itself.

The oldest temple-mountain available for study is the Bakong (founded A.D. 881). Within its first enclosure is a series of five rectangular buildings of which four are symmetrically distributed north and south of the monument's principal east-west axis. These buildings are normally called long rooms. Although not found at Phnom periphery of the first levels of the pyramids of the Eastern Mebon (A.D. 952) and Pre Rup (A.D. 961; At the unfinished temple of Ta Keo (end of the 10th, beginning of the 11th century; Fig. 6), the series of long rooms of the two preceding temples is transformed into a ring gallery along the perimeter of the second level. This gallery at Ta Keo was covered with a framework and tiles and is, curiously, totally inaccessible.

To be rigorously accurate, it should be pointed out that the transformation of long rooms into galleries could be simply an innovation, an addition, to temple mountain architecture. However, it might signal a profound symbolic or cultural change. Technically, nevertheless, the appearance of galleries, whether involving a new creation or the organic transformation of pre-existing long rooms, clearly represents an evolution, a further step in Khmer construction.

The next phase is at Phirneanakas where a ring gallery was set up on the third and last level of the pyramid in the first half of the 11th century. This gallery is the first to be entirely vaulted in sandstone (Fig. 8). At the Eaphuon, in the third quarter of the 11th century, three ring galleries occupied the first, third and fifth levels of the pyramid; moreover, the highest gallery rests on two series of columns and has, probably for stability, a windowed center wall.

The following phase is at Angkor Wat (first half of the 12th century), the major accomplishment of Angkorean Khmer architecture (Fig. 10). Here, the three levels of the pyramid are girded by vaulted sandstone galleries. These rest, at the first two levels, on a wall and columns, and at the third level, on columns alone. Side aisles, which themselves rest on columns, buttress these galleries. This system is adopted at the Bayon several decades later for the monument's two enclosed galleries.

These diverse observations indicate, therefore, that the architects worked in a consistent way in terms of technical boldness and the visual lightening of the structures. A comparable evolutionary line can be drawn, although on the basis of different criteria, for the sanctuary towers themselves and for other buildings such as the "libraries" (for this type of structure, see Coedès 1911).

Far from being rigid, Khmer architects have always questioned their art; their research was only interrupted by unfavorable historic circumstances after the reign of Jayavarman II in the 13th century. Would they have been able to go farther still and glorify new monuments with new architectural solutions? Nothing could be less certain, for Angkorean Khmer architecture evolved with a major handicap: the vaulting method routinely used was, in effect, corbelling, which necessarily limits the interior span. Having conducted a rich dialectic between covered and uncovered spaces, which

path would Khmer architecture have chosen, given the methods of dry wall construction they used? The question remains unanswered here but it invites reflection and is worth asking.

Permanence: The “Architecture-Image”

The most constant aspect of Khmer architecture, whether individual structure, sanctuary complex, or city, is that of “architecture-image,” that is, the representation in architectural form of images provided by the texts. Khmer epigraphy often refers to a monument’s precise place in Indian cosmography (see Eoisselier 1970). As mentioned above, in the Indo-Khmer religious perspective the sanctuary could be likened to a mountain. In the case of Phnom Eakheng, the quincuncial arrangement of the five sanctuary towers at the summit corresponds in a very concrete way to the peak of Mount Meru buttressed by four other strong mountains. All forms of religious architecture in Angkorian Cambodia must therefore be as close as possible to the image suggested by the texts.

The image of a divine home, in this case that of Siva, is shown in what seems to have been its most important form in two famous bas-reliefs on the Eanteay Srei temple (consecrated in A.D. 967-968) near Angkor. The reliefs occupy the tympana of the pediments on the southern library in the monument’s first enclosure. They show us Siva surrounded by many divine or semi-divine personages in his private celestial home of Kailasa; he is seated at the summit of a stepped pyramid (Fig. 11). It is thus perfectly appropriate to designate the stepped pyramid monuments at Angkor as temple-mountains, even if it hints of redundancy in that every sanctuary in the Indian tradition is akin to a mountain. In building their pyramids, the Khmer simply solidify this image.

The bas-reliefs of the library present another picture of the inhabitants of Siva’s home: hybrid figures with human bodies and animal heads. These figures are also found on the stairs leading to the monument’s three sanctuary towers and, again, permit us to regard these temples just as though they were divine mountains.

According to Professor Jean Filliozat, the conformity of the architecture to the texts is such that some of the texts may have been inspired by the architecture (1961). Professor Filliozat concludes that the description of the Hari (Vishnu) Temple in the Indian text *KurmaPurana* may have been purely and simply inspired by the temple-mountain of Angkor Wat. Its builder, the great king Stuyavarman II (A.D. 1113 to at least 1145), was a fervent devotee of Vishnu. Whether the text influenced those who created the temple, or whether the temple—well-known, important and prestigious—influenced the description in the *Kurnnapurana* matters relatively little, given the text’s uncertain date.

The moats and the system of concentric walls at Angkor Waft certainly will arrest one’s attention more. These features characterize all the temple-mountains. They evoke divine residences perched on top of concentric chains of insurmountable mountains surrounded by oceans, in the image of Mount Meru. At Angkor Waft, the small courtyard situated at the same height as the cruciform gallery on the second level, as well as those that surround the central sanctuary at the summit of the pyramid, could even be likened to the primordial ocean, seat of repose of Vishnu

during his sleep between two cosmic eras. In fact, during the rainy season, these courtyards fill with water. It is easy to imagine that on certain occasions, with the drainage systems blocked, they were turned into basins.

Our last example of an “architecture-image” is that of Angkor Thom and the Bayon, an immensely complicated monument with multiple meanings. The equivalence of the Bayon to Mount Mandara has long been invoked to explain the birth of the city. Using Mount Mandara as a churning rod, giants supporting the body of an immense serpent stir and agitate the Sea of Milk just as the gods and demons have done from time immemorial. In Hindu mythology, the purpose of stirring up the Sea of Milk was to obtain the elixir of immortality. This elixir appeared only after the appearance of a certain number of other precious things, among them the goddess Sri (Beauty, Prosperity), the elephant Airavata (the god Indra’s mount), or the *aPsaras* (celestial nymphs). The churning myth also helps us to understand Angkor Thom, the city of Jayavarmnan VII, as a source of benefits, treasures, or riches, and by extension, the source of prosperity of the Khmer Empire itself. (See the *Vishnu purāna* [Book I, chapter 9] and the *Bhāgavata Purāna* [Book 8, chapters 6-11] for versions of this myth.)

In the case of Angkor Thom, however, several images are superimposed on one another. Professor J. Eoisselier sees in the Eayon an image of the Room of Good Order (Sudhammasabha) of Buddhist mythology.

Viewed this way, the monument’s striking towers covered with faces would be in communication with the Brahman Sananlcumara (“perpetually young”), those who transmit the teaching of Buddha to the Buddhist and Hindu divinities periodically reunited in the Room (Fig. 13). Angkor Thom thus becomes a replica on earth of the city of Indra—the king of the gods—at the center of which this Room was built. Situated on the summit of Mount Meru, the city of Indra is guarded by the four great kings of the East; it is their faces that one should recognize in the monumental gates of Angkor Thom (Fig. 12). Moreover, 54 giant figures supporting a massive serpent are stationed on each side of the dikes crossing the moats; they recall the image of the Churning of the Sea of Milk. We might go further and liken the giants to divine or semi-divine armies assuring the protection of the city (see Le Bonheur 1989). And finally, the scene recalls the symbolic equivalence of the serpent (*nag*) and the rainbow—a celestial bridge permitting passage from the human world outside the city to the divine world created at the heart of Angkor Thom by the Bayon itself.

Diverse, evolving, permanent: Khmer architecture, of which the temple-mountain is at once the best-known and most important expression, remains one of Asia’s major contributions to the world’s cultural patrimony. Despite the considerable number of studies, both general and specific, devoted to it, it is far from having been completely explained. It still constitutes a field of exploration and research as rich as the religious traditions that gave rise to it.”

Comparison between left: Borobudur of Java (825) and right: Bakong of Cambodia (881), both temples had similar basic design of stepped pyramid and similar corbelling method, which suggest there was a connection of technical and cultural influence between ancient Java and Cambodia.

Central Javanese temples were not built anywhere and anyhow, quite the contrary: their position within the landscape and their architectural design was determined by a series of socio-cultural, religious and economical factors

A **step pyramid** or **stepped pyramid** is an architectural structure that uses flat platforms, or steps, receding from the ground up, to achieve a completed shape similar to a geometric pyramid. Step pyramids are structures which characterized several cultures throughout history, in several locations throughout the world. These pyramids typically are large and made of several layers of stone. The term refers to pyramids of similar design that emerged separately from one another, as there are no firmly established connections between the different civilizations that built them.

As well as menhirs, stone tables, and stone statues Austronesian megalithic culture in Indonesia also featured earth and stone step pyramid structure, referred to as *punden berundak* as discovered in Pangguyangan site near Cisolok and in Cipari near Kuningan. are the abode for the spirit of the ancestors. The step pyramid is the basic design of 8th century Borobudur Buddhist monument in Central Java. However the later temples built in Java were influenced by Indian Hindu architecture, as displayed by the towering spires of Prambanan temple. In the 15th century Java during the late Majapahit period saw the revival of Austronesian indigenous elements as displayed by Suku temple that somewhat resembles a Mesoamerican pyramid, and also stepped pyramids of Mount Penanggungan.

Egyptian pyramid construction techniques are the controversial subject of many hypotheses. These techniques seem to have developed over time; later pyramids were not constructed in the same way as earlier ones. Most of the construction hypotheses are based on the belief that huge stones were carved from quarries with copper chisels, and these blocks were then dragged and lifted into position. Disagreements chiefly concern the methods used to move and place the stones.

In addition to the many unresolved arguments about the construction techniques, there have been disagreements as to the kind of workforce used. The Greeks, many years after the event, believed that the pyramids must have been built by slave labor. Archaeologists now believe that the Great Pyramid of Giza (at least) was built by tens of thousands of skilled workers who camped near the pyramids and worked for a salary or as a form of tax payment (levy) until the construction was completed, pointing to workers' cemeteries discovered in 1990. For the Middle Kingdom Pyramid of Amenemhat II, there is evidence from the annal stone of the king that foreigners from Canaan were used

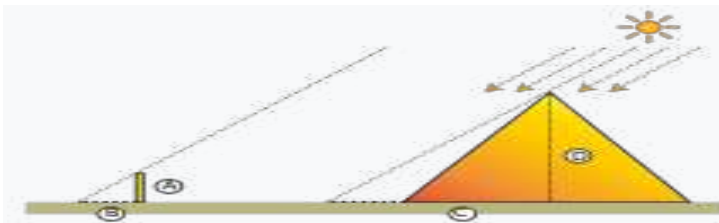
What can we learn from Building the pyramids from quarried stone blocks

One of the major problems faced by the early pyramid builders was the need to move huge quantities of stone. The Twelfth Dynasty tomb of Djehutihotep has an illustration of 172 men pulling an alabaster statue of him on a sledge. The statue is estimated to weigh 60 tons and Denys Stocks estimated that 45 workers would be required to start

moving a 16,300 kg (35,900 lb; 16.3 t) lubricated block, or eight workers to move a 2,750 kg (6,060 lb; 2.75 t) block. Dr. R. H. G. Parry has suggested a method for rolling the stones, using a cradle-like machine that had been excavated in various new kingdom temples. Four of those objects could be fitted around a block so it could be rolled easily. Experiments done by the Obayashi Corporation, with concrete blocks 0.8 metres (2 ft 7 in) square by 1.6 metres (5 ft 3 in) long and weighing 2.5 tonnes (2,500 kg; 5,500 lb), showed how 18 men could drag the block over a 1-in-4 incline ramp, at a rate of 18 metres per minute (1 ft/s). This idea was previously described by John Bush in 1977, and is mentioned in the *Closing Remarks* section of Parry's book. Vitruvius in *De architectura* described a similar method for moving irregular weights. It is still not known whether the Egyptians used this method but the experiments indicate it could have worked using stones of this size. Egyptologists generally accept this for the 2.5 ton blocks mostly used but do not agree over the methods used for the 15+ ton and several 70 to 80 ton blocks.

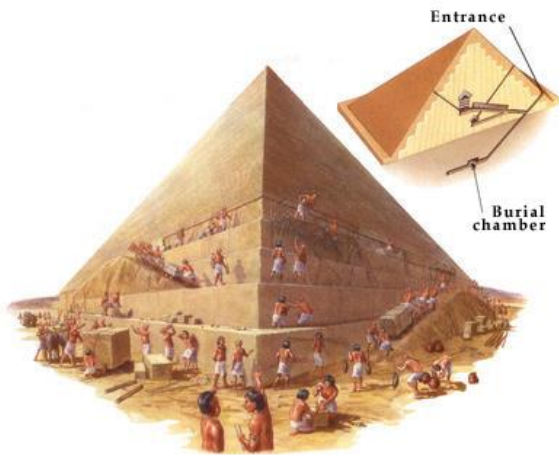
As the stones forming the core of the pyramids were roughly cut, especially in the Great Pyramid, the material used to fill the gaps was another problem. Huge quantities of gypsum and rubble were needed. The filling has almost no binding properties, but it was necessary to stabilize the construction. To make the gypsum mortar, it had to be dehydrated by heating which requires large quantities of wood. According to Egyptologists, the findings of both the 1984 and 1995 David H. Koch Pyramids Radiocarbon Projects may suggest that Egypt had to strip its forest and scrap every bit of wood it had to build the pyramids of Giza and other even earlier 4th Dynasty pyramids. Carbon dating samples from core blocks and other materials revealed that dates from the 1984 study averaged 374 years earlier than currently accepted and the 1995 dating averaging 100–200 years. As suggested by team members, "We thought that it was unlikely that the pyramid builders consistently used centuries-old wood as fuel in preparing mortar. The 1984 results left us with too little data to conclude that the historical chronology of the Old Kingdom was wrong by nearly 400 years, but we considered this at least a possibility". To explain this discrepancy, Egyptologists proposed the "old wood" theory claiming the earlier dates were possibly derived from recycling large amounts of centuries old wood and other earlier materials.^[10]

There is good information concerning the location of the quarries, some of the tools used to cut stone in the quarries, transportation of the stone to the monument, leveling the foundation, and leveling the subsequent tiers of the developing superstructure. Workmen probably used copper chisels, drills, and saws to cut softer stone, such as most of the limestone. The harder stones, such as granite, granodiorite, syenite, and basalt, cannot be cut with copper tools alone; instead, they were worked with time-consuming methods like pounding with dolerite, drilling, and sawing with the aid of an abrasive, such as quartz sand. Blocks were transported by sledge likely lubricated by water. Leveling the foundation may have been accomplished by use of water-filled trenches as suggested by Mark Lehner and I. E. S. Edwards or through the use of a crude square level and experienced surveyors.^{[15][16]}



Thales's method (intercept theorem) to determine the height of Cheops pyramid

The diary of Merer, logbooks written more than 4,500 years ago by an Egyptian official and found in 2013 by a French archeology team under the direction of Pierre Tallet in a cave in Wadi al-Jarf, describes the transportation of limestone from the quarry in Tora to Giza.



Architecture of Borobudur

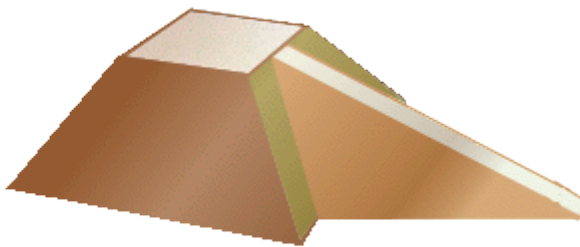


Borobudur design as a stepped pyramid: Built with about 2,000,000 cubic feet (56,600 cubic metres) of gray volcanic stone, Borobudur encloses a small

hill and is shaped like a stepped pyramid with three major levels—a square base, a middle level of five square terraces, and an upper level of three circular terraces—totaling, in effect, nine lesser sections. This ancient pyramid temple is unique. Unlike other ancient temples built on a flat surface, Borobudur was constructed on a hill, 265 meters above sea level and 15 meters above the dry lake surrounding it.

The lake's existence was cause for intense discussions between archaeologists during the twentieth century since it was thought that Borobudur was built on the banks of the lake or even floated on it.

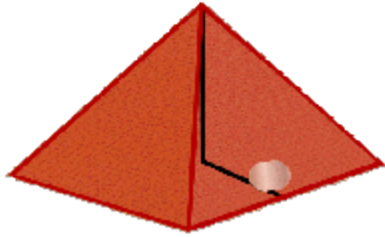
The Various Possible Methods of Pyramid Construction



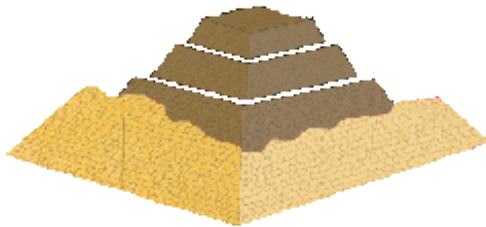
A major problem facing the builders of the Ancient Egyptian Pyramids, was that of getting the Large stone blocks to the height they required. the method shown at left, is the only one proven to have been used. The ramps were built on inclined planes of mud brick and rubble. They then dragged the blocks on sledges to the needed height. As the pyramid grew taller, the ramp had to be extended in length, and its base was widened, else it would collapse. It is likely that for the construction of each pyramid, several ramps were probably used.



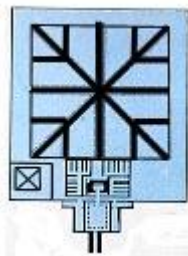
The arrangement of the ramps used for building is in much dispute. Assuming that the step pyramid was built before the outer structure, and then the packing blocks were laid on top, the ramps could have run from one step to another rather than approaching the pyramid face at right angles



Some of the pyramids indicate an accurate understanding of Pi, but the mathematical knowledge of the Egyptians did not include the ability to arrive at this by calculation. It is possible that this could have been arrived at "accidentally" through a means such as counting the revolutions of a drum.



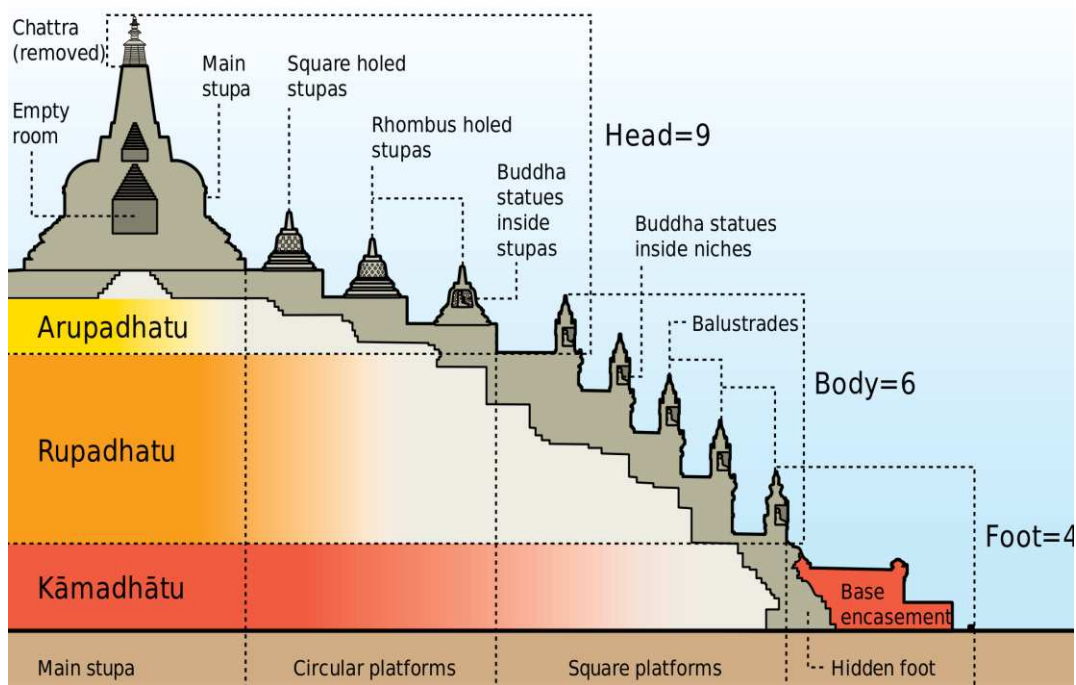
The internal construction of most true pyramids consists of a series of buttress walls surrounding a central core. The walls decrease in height from the center outwards. In other words, the core of the true pyramid is essentially a step pyramid. The internal arrangement added stability to the structure. Packing blocks filled the "steps" formed by the faces of the outermost buttress walls and casting blocks (often Limestone) completed the structure of the true pyramid.



Architects and builders used a different form of construction in the pyramids of the 12th and 13th Dynasties. Mainly because of economy, for it was suitable for relatively modest structures in inferior materials. Solid walls of stone ran from the center, and shorter cross walls formed a series of chambers filled with stone blocks, rubble or mud bricks. An outer casing was usually added, and although quite effective in the short term, it did not even come close to the earlier construction methods. Pyramids which were built with this structural design are quite delapidated and worn.

Borobudur Cross Section and Building Ratio

Borobudur, Central Java, Indonesia



Archaeological site of Borobudur during the reconstruction suggests that the adherents of Hinduism and Indian Faith have begun to build large buildings on Borobudurs of the hill before the site was awarded the Buddhists. Foundations unlike a Hindu or Buddhist Shrine structures, and therefore, the original structure is more indigenous Javanese than a Hindu or a Buddhist.

Architecture. Design.

Borobudur is built as a single large stupa, and when viewed from above, has the form of a giant tantric Buddhist mandala, simultaneously representing the Buddhist cosmology and nature of mind. The original Foundation is a square, approximately 118 m 387 ft on each side. It has nine platforms, of which the lower six square and three circular. The upper platform features seventy-two small stupas surrounding one large Central stupa. Each stupa is bell-shaped and pierced by numerous decorative openings. Buddha statues sitting inside a hollow shell.

The design of Borobudur which was in the form of a stepped pyramid. Earlier, in the prehistoric Austronesian megalithic culture in Indonesia was built several earthen mounds and stone step pyramid structure called punden berundak as discovered on the website Pangguyangan near attractions and Cipari in the district of Kuningan. The construction of stone pyramids is based on their own beliefs that mountains and high places are the abode of spirits or ancestors hyangs. In punden berundak step pyramid is the basic design of

Borobudur, which is a continuation of older megalithic tradition Incorporated with Mahayana Buddhist ideas and symbolism.

The monuments of the three divisions symbolize the three "spheres" of Buddhist cosmology, namely Kamadhātu the world of desires, Rupadhātu the world of forms, and finally Arupadhātu formless world. Ordinary sentient beings live their lives at a low level, the realm of desire. Those who burned out all desire for continued existence to leave the world and the desire to live in peace on the level of form: they see the form, but not drawn to them. Finally, full Buddhas go beyond even form and experience reality at its purest, most fundamental level, the formless ocean of Nirvana. Liberation from the cycle of Samsāra, where enlightened souls are not attached to worldly form corresponds to the concept of Sūnyatā, the complete voidness or absence of the self. Kāmadhātu is represented base Rupadhātu on the five square platforms of the body, and Arupadhātu with three circular platforms and the large top of the stupa. The architectural features between three stages of metaphorical differences. For instance, square and detailed decorations in Rupadhātu disappear in a simple circular platforms in the Arupadhātu to represent how the world of forms, where people with forms and names - changes into the world of the formless.

Joint worship in Borobudur is performed in the walking pilgrimage. The pilgrims guided by a system of staircases and corridors, climbing to the upper platform. Each platform represents one stage of enlightenment. The path that leads pilgrims was designed to symbolize Buddhist cosmology.

In 1885, a hidden structure under the base was accidentally discovered. "Hidden level" contains reliefs, 160 of which are narratives describing the real Kāmadhātu. The remaining reliefs are panels with short inscriptions that apparently provide instructions for the sculptors, illustrating the scene to be cut. The real base is hidden in the shell base, the purpose of which remains a mystery. It was first thought that the real base should be covered to prevent a disastrous subsidence of the monument on the hill. There is another theory, in the shell of the base was added because the original hidden Foundation was incorrectly designed, according to Vastu Shastra, the Indian ancient book about architecture and town planning. Regardless of why it was commissioned, housing the base was built with detailed and meticulous design and aesthetic and religious considerations.

Architecture. The structure of the building

Approximately 55.000 cubic meters of 72.000 cubic meters of andesite stones were taken from neighbouring stone quarries to the construction of the monument. The stone was cut to size on site and laid without mortar. Knobs, indentations and dovetails were used to form joints between stones. The roof of the stupa, niches and arched gate was built into the eaves. The reliefs were created on the spot after the building was completed.

The monument is equipped with a good drainage system to meet the high drains. To prevent flooding, 100 spouts are installed at each corner, each with a unique carved Gargoyle in the shape of a giant or Makara.

Borobudur differs markedly from the overall design of other structures built for this purpose. Instead of built on a flat surface, Borobudur was built on a natural hill. However, the construction technology is similar to other temples in Java. Without the inner spaces seen in other temples, and the overall design resembles the shape of pyramid, Borobudur was first thought more likely to have served as a stupa, instead of a temple. Stupa is intended as a temple for Buddha. Sometimes stupas were built only as devotional symbols of Buddhism. The temple, on the other hand, is used as a prayer house. The meticulous complexity of the monuments suggests that Borobudur is actually a temple.

Little is known about Gunadharma, the architect of the complex. His name is repeated from Javanese folk tales, not from written inscriptions.

Basic unit of measurement in the construction was in Paphos, defined as the length of a human face from the forehead hairline to tip of chin and tip of the thumb to the tip of the middle finger when both fingers are stretched at the maximum distance. Thus, the block is relative from one individual to another, but the monument has exact measurements. A survey conducted in 1977 revealed frequent findings of a ratio of 4:6:9 around the monument. The architect used the formula to lay out the exact dimensions of fractals and self-similar geometry in the design Borobudurs. This ratio is also found in the designs of pawon temple and mendut temple, near Buddhist temples. Archaeologists have suggested that 4:6:9 ratio and the Tala have been a calendar, astronomical and cosmological significance, as is the case with the temple of Angkor Wat in Cambodia.



The basic structure can be divided into three components: base, body and top. The base 123 m x 123 m 404 m × 404 ft. in size with 4 m 13 ft wall. The body is composed of five square platforms, each of diminishing height. The first

terrace is located at 7 meters 23 feet from the edge of the base. Each subsequent terrace is situated in a depth of 2 m 6.6 feet, leaving a narrow corridor at each stage. The top consists of three circular platforms, with each stage supporting a row of perforated stupas, arranged in concentric circles. There is one main dome at the center, the top of which is the highest point of the monument, 35 m 115 feet above ground level. The stairs in the center of each of the four sides give access to the top, with several arched gates overlooked a 32 lion statues. The gate is decorated with Kalass head carved on the top of each and Makaras projecting from each side. This Kala-Makara motif is often found on the gates of the Javanese temples. The main entrance is located on the East side, in place of the first narrative reliefs. Stairs on the hillside and connects the monument to the lowland plain.¹

Built from nearly two million stone blocks of andesite, a bluish-gray volcanic stone, Borobudur is shaped like a stepped pyramid, the base of which is 402 feet long from north to south and 383 feet long from east to west; the height is now 95 feet above ground level. The colossal monument consists of six rectangular terraces topped by three concentric circular terraces.

Four of the terraces are galleries, each enclosed by a balustrade and an inner wall, open to the sky and carved with sculptures.



At first sight, the square galleries are an overwhelming mass of images depicting the activities of gods and mortals carved in the dark volcanic stone along the wide processional paths. There are more than 1,300 narrative panels illustrating the life of Buddha and Buddhist texts, the largest and most complete collection of Buddhist reliefs in the world. Originally, there were over 500 statues of the Buddha,* 432 seated in lotus position

on the square terraces and 72 meditating inside the bell-shaped stupas on the top terraces. There are no elaborate carvings on these three upper levels.

Sir Thomas Raffles, the British governor of Indonesia responsible for the excavation of Borobudur in 1814, speculated that Borobudur may have originally been a holy place of pilgrimage for believers of the Mahayana branch of Buddhism.

Monks from the nearby monastery would have led pilgrims along the galleries, using the carved panels to illustrate the stories of their faith and the way of the Buddha as they circled their way to the top of the monument.

Lacking further historical information, Raffles was unable to determine the exact date of Borobudur's construction. But he knew that in the 13th and 14th centuries, Islam had replaced Buddhism as the island's religion, and he thought it unlikely that Borobudur would have been built since then. Also, ancient records showed that in the 10th century, the region around Borobudur had been

mysteriously deserted, and all construction in central Java had stopped then. From the detailed carvings, Raffles concluded that Borobudur had been built sometime between the eighth and tenth centuries, during a period of relative peace in East Asia, after the nomadic and religious invasions had run out of steam.

No one knows what happened to the culture that built the monument. Perhaps Merapi had erupted, choking the rice lands with layers of volcanic ash. Whatever the cause, the population moved to East Java in a mass exodus, and Borobudur was left behind, its meaning lost in time.

Cambodia

The École Française d'Extrême-Orient (EFEO) began restoration work at Angkor Wat in 1908. Between 1986 and 1992, the Archaeological Survey of India (ASI) carried out restoration work on the temple. Bayon was restored by EFEO followed by Japanese Government Team for the Safeguarding of Angkor (JSA). Ta Prohm is being restored by Archaeological Survey of India.

Throughout Cambodia's long history, religion has been a major source of cultural inspiration. Over nearly two millennia, Cambodians have developed a unique Cambodian culture and belief system from the syncreticism of indigenous animistic beliefs and the Indian religions of Buddhism and Hinduism. Indian culture and civilization, including its languages and arts reached mainland Southeast Asia around the 1st century AD. It is generally believed that seafaring merchants brought Indian customs and culture to ports along the Gulf of Thailand and the Pacific en route to trade with China. The Kingdom of Funan was most probably the first Cambodian state to benefit from this influx of Indian ideas. There is also French influence as well.



Angkor Wat, the most famous Cambodian heritage site.//Traditional Khmer house from 1800's

1.<https://amp.www.google-wiki.info/233717/1/borobudur.html>

The Golden age of Cambodia was between the 9th and 14th century, during the Angkor period, during which it was a powerful and prosperous empire that flourished and dominated almost all of inland Southeast Asia. However, Angkor would eventually collapse after much in-fighting between royalty and constant warring with its increasingly powerful neighbors, notably Siam and Dai Viet. Many temples from this period however, like Bayon and Angkor Wat still remain today, scattered throughout Thailand, Cambodia, Laos, and Vietnam as a reminder of the grandeur of Khmer arts and culture. Cambodia's unparalleled achievements in art, architectures, music, and dance during this period have had a great influence on many neighboring kingdoms, namely Thailand and Laos. The effect of Angkorian culture can still be seen today in those countries, as they share many close characteristics with current-day Cambodia.

Khmer architecture

The Angkorian architects and sculptors created temples that mapped the cosmic world in stone. Khmer decorations drew inspiration from religion, and mythical creatures from Hinduism and Buddhism were carved on walls. Temples were built in accordance to the rule of ancient Khmer architecture that dictated that a basic temple layout include a central shrine, a courtyard, an enclosing wall, and a moat. Khmer motifs use many creatures from Buddhist and Hindu mythology, like the Royal Palace in Phnom Penh, use motifs such as the garuda, a mythical bird in Hinduism. The architecture of Cambodia developed in stages under the Khmer empire from the 9th to the 15th century, preserved in many buildings of the Angkor temple. The remains of secular architecture from this time are rare, as only religious buildings were made of stone. The architecture of the Angkor period used specific structural features and styles, which are one of the main methods used to date the temples, along with inscriptions.

In a modern rural Cambodia, the nuclear family typically lives in a rectangular house that may vary in size from four by six meters to six by ten meters. It is constructed of a wooden frame with gabled thatch roof and walls of woven bamboo. Khmer houses are typically raised as much as three meters on stilts for protection from annual floods. Two ladders or wooden staircases provide access to the house. The steep thatch roof overhanging the house walls protects the interior from rain. Typically a house contains three rooms separated by partitions of woven bamboo. The front room serves as a living room used to receive visitors, the next room is the parents' bedroom, and the third is for unmarried daughters. Sons sleep anywhere they can find space. Family members and neighbors work together to build the house, and a house-raising ceremony is held upon its completion. The houses of poorer persons may contain only a single large room. Food is prepared in a separate kitchen located near the house but usually behind it. Toilet facilities consist of simple pits in the ground, located away from the house, that are covered up when filled. Any livestock is kept below the house. Chinese and

Vietnamese houses in Cambodian towns and villages are typically built directly on the ground and have earthen, cement, or tile floors, depending upon the economic status of the owner. Urban housing and commercial buildings may be of brick, masonry, or wood.

Religion in Cambodia

Cambodia is predominantly Buddhist with 80% of the population being Theravada Buddhist, 1% Christian and the majority of the remaining population follow Islam, atheism, or animism.



Buddhist nun at Angkor Wat, Siem Reap, Cambodia.//

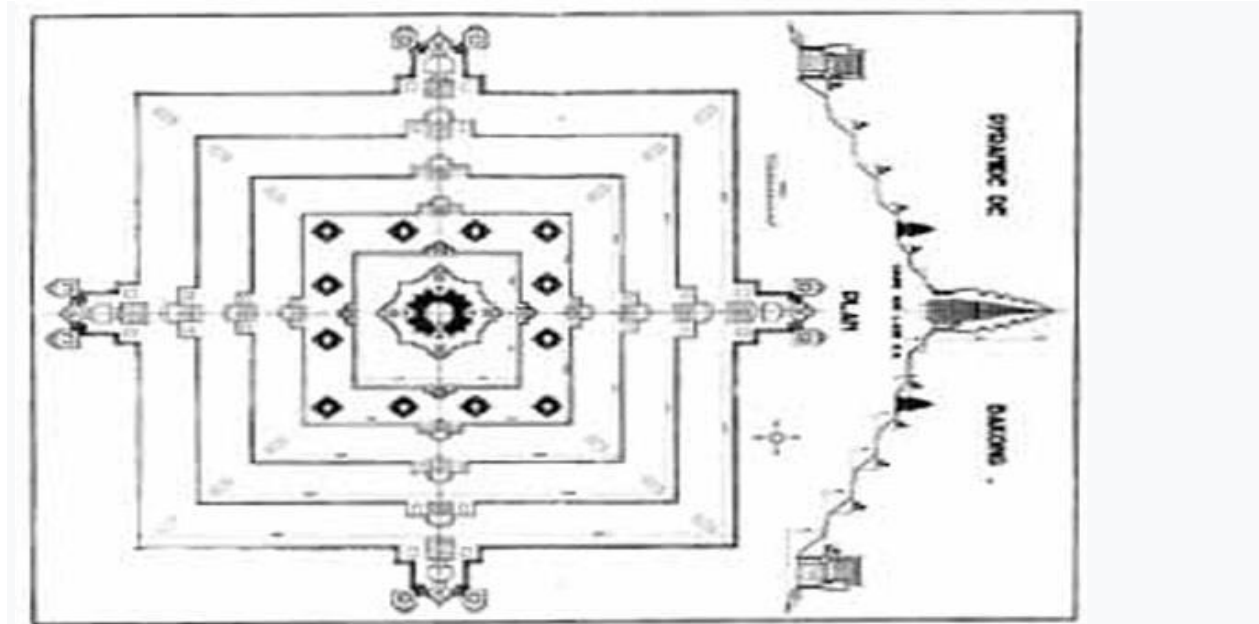
Pchum Ben, also known as "Ancestors' Day

Buddhism has existed in Cambodia since at least the 5th century CE. Theravada Buddhism has been the Cambodian state religion since the 13th century CE (excepting the Khmer Rouge period), and is currently estimated to be the faith of 90% of the population.^[3] A smaller number of Cambodians, mostly of Vietnamese and Chinese descent, practice Mahayana Buddhism. The main orders of Buddhism practiced in Cambodia are Dhammayuttika Nikaya and Maha Nikaya.

Bakong in Cambodia is the first temple mountain of sandstone constructed by rulers of the Khmer empire at Angkor near modern Siem Reap in Cambodia. In the final decades of the 9th century AD, it served as the official state temple of King Indravarman I in the ancient city of Hariharalaya, located in an area that today is called Roluos.

The structure of Bakong took shape of stepped pyramid, popularly identified as temple mountain of early Khmer temple architecture. The striking similarity of the Bakong and Borobudur temple in Java, going into architectural details such as the gateways and stairs to the upper terraces, suggests strongly that Borobudur was served as the prototype of Bakong. There must have been exchanges of travelers, if not mission, between Khmer kingdom and

the Sailendras in Java. Transmitting to Cambodia not only ideas, but also technical and architectural details of Borobudur, including arched gateways in corbelling method.



Other than examining bas-reliefs carved on the temple's walls, the study of ancient Javanese society is also conducted through archaeological relics. The Wonoboyo hoard golden artefacts attest to the wealth, art, and culture as well as the aesthetic achievement of the Medang Kingdom. The artefacts show the intricate artwork and technical mastery of the ancient Javanese goldsmith. The hoard was estimated to date from the reign of King Balitung.^[44] The treasure has been identified as belonging to a noble or a member of the royal family.^[45]

The earliest temple in the Southern Central Java Mataram region was the Hindu Shivaist Gunung Wukir temple, linked to Canggal inscription (732 CE) built by King Sanjaya. Almost 50 years later the oldest Buddhist temple was built in Prambanan region, the Buddhist Kalasan temple, linked to Kalasan inscription (778 CE) and King Panangaran. From this time, the kingdom saw exuberant temple construction projects, such as Sari, Manjusri, Lumbung, Ngawen, Mendut, Pawon and peaked in the construction of Borobudur, the massive stone mandala, that took shape of a mountain temple pinnacled with stupas that completed c. 825 CE.

The monumental Hindu temple of Prambanan in the vicinity of Yogyakarta — initially built during the reign of King Pikatan (838–850), and expanded continuously through the reign of Lokapala (850–890) to Balitung (899–911) — is a fine example of ancient Medang Mataram art and architecture. The description of a grand temple compound dedicated for lord Shiva, and the public project to shift the course of the river near the temple (Opak river) to run straight along western wall of temple compound was also

mentioned in Shivagrha inscription. The grand temple complex was dedicated to the Trimurti, the three highest gods in the Hindu pantheon (Shiva, Brahma, Vishnu). It was the largest Hindu temple ever built in Indonesia, evidence of the immense wealth and cultural achievement of the kingdom.

Other Hindu temples dated from Medang Mataram Kingdom era are: Sambisari, Gebang, Barong, Ijo, and Morangan. Although the Shivaist regain the favour, Buddhist remain under royal patronage. The Sewu temple dedicated for Manjusri according to Kelurak inscription was probably initially built by Panangkaran, but later expanded and completed during Rakai Pikatan's rule, whom married to a Buddhist princess Pramodhawardhani, daughter of Samaratungga. Most of their subjects retained their old religion; Shivaists and Buddhists seemed to co-exist in harmony. The Buddhist temple of Plaosan, Banyunibo and Sajiwan were built during the reign of King Pikatan and Queen Pramodhawardhani, probably in the spirit of religious reconciliation after the succession disputes between Pikatan-Pramodhawardhani against Balaputra.

Medang kingdom had an exceptionally intense relations with the regional hegemon Srivijaya of Sumatra. In earlier period, the relations was close and intimate, as Sailendran kings of Java has formed an alliance with Maharaja of Srivijaya and the two royal houses seems to be merged. In later period however, the relations was deteriorated to warfare, as Dharmawangsa launched failed attempt to capture Palembang, and Srivijaya well-crafted retaliation ensued. In its eastern boundary, the Medang kingdom seems to subjugate the neighboring Bali, and pulled the island into its sphere of influence.

The Khmer art and architecture during the formative early Angkor era also believed to being influenced by Javanese art and architecture; the striking similarity of the Bakong temple in Cambodia to Borobudur, strongly suggests that Bakong was inspired by Borobudur's design. There must had been exchanges of travellers, if not mission, between Kambuja and Java. Transmitting to Cambodia not only ideas, but also technical and architectural details, including arched gateways in corbelling method.

The Kaladi inscription (c. 909 CE), mentioned Kmir (Khmer people of the Khmer Empire) together with Campa (Champa) and Rman (Mon) as foreigners from mainland Southeast Asia that frequently came to Java to trade. The inscription suggests a maritime trade network has been established between kingdoms in mainland Southeast Asia and Java.

The name of the Medang Kingdom was mentioned in the Laguna Copperplate Inscription of the Philippines' Tondo, dated 822 saka (c. 900 CE), discovered in Lumban, Laguna, Philippines. The discovery of the inscriptions, written in the Kawi script in a variety of Old Malay containing numerous loanwords from Sanskrit and a few non-Malay vocabulary elements whose origin is ambiguous between Old Javanese and Old Tagalog, suggests that the people or officials of

the Medang Kingdom had embarked on inter-insular trade and foreign relations in regions as far away as the Philippines, and that connections between ancient kingdoms in Indonesia and the Philippines existed.

In 802 AD, the first king of Angkor Jayavarman II declared the sovereignty of Cambodia. After ups and downs, he established his capital at Hariharalaya. A few decades later, his successors constructed Bakong in stages as the first temple mountain of sandstone at Angkor.^[3] The inscription on its stele (classified K.826) says that in 811 King Indravarman I dedicated the temple to the god Shiva and consecrated its central religious image, a lingam whose name Sri Indresvara was a combination of the king's own and the suffix "-esvara" which stood for Shiva ("Ísvara"). According to George Coedès, the devarāja cult consisted in the idea of divine kingship as a legitimacy of royal power but later authors stated that it doesn't necessarily involve the cult of physical persona of the ruler himself.

Bakong enjoyed its status as the state temple of Angkor for only a few years, but later additions from the 12th or 13th centuries testify that it was not abandoned. Toward the end of the 9th century, Indravarman's son and successor Yasovarman I moved the capital from Hariharalaya to the area north of Siem Reap now known as Angkor, where he founded the new city of Yaśodharapura around a new temple mountain called Bakheng.



SITE:



A statue of a lion guards the stairs on the central pyramid./Step Pyramid in South America

The site of Bakong measures 900 metres by 700 metres, and consists of three concentric enclosures separated by two moats, the main axis going from east to west. The outer enclosure has neither a wall nor gopuram and its boundary is the outer moat, today only partially visible. The current access road from NH6 leads at the edge of the second enclosure. The inner moat delimits a 400 by 300 metres area, with remains of a laterite wall and four cruciform gopuram, and it is crossed by a wide earthen causeway, flanked by seven-headed nāgas, such as a draft of nāga bridge . Between the two moats there are the remains of 22 satellite temples of brick. The innermost enclosure, bounded by a laterite wall, measures 160 metres by 120 metres and contains the central temple pyramid and eight brick temple towers, two on each side. A number of other smaller buildings are also located within the enclosure. Just outside the eastern gopura there is a modern buddhist temple.

The pyramid itself has five levels and its base is 65 by 67 metres. It was reconstructed by Maurice Glaize at the end of the 1930s according to methods of anastylosis. On the top there is a single tower that is much later in provenance, and the architectural style of which is not that of the 9th century foundations of Hariharalaya, but that of the 12th-century temple city Angkor Wat.

Though the pyramid at one time must have been covered with bas relief carvings in stucco, today only fragments remain. A dramatic scene-fragment involving what appear to be asuras in battle gives a sense of the likely high quality of the carvings. Large stone statues of elephants are positioned as guardians at the corners of the three lower levels of the pyramid. Statues of lions guard the stairways.

Anastylosis (from the Ancient Greek: , ana = "again", and = "to erect [a stela or building]") is an archaeological term for a reconstruction technique whereby a ruined building or monument is restored using the original architectural elements to the greatest degree possible. It is also sometimes used to refer to a similar technique for restoring broken pottery and other small objects.

Methodology: The intent of anastylosis is to rebuild, from as much of the original materials that is left after usually thousands of years of abuse, historical architectural monuments which have fallen into ruin. This is done by placing components back into their original positions. Where standing buildings are at risk of collapse, the method may entail the preparation of drawings and measurements, piece-by-piece disassembly, and careful reassembly, with new materials as required for structural integrity; occasionally this may include new foundations. When elements or parts are missing, modern materials (of restoration grade) may be substituted, such as plaster, cement, and synthetic resins.

The international Venice Charter of 1964 details criteria for anastylosis. First, the original condition of the structure must be confirmed scientifically. Second, the proper placement of each recovered component must be determined. Third, supplemental components must be limited to those necessary for stability (that is, substitute components may never lie at the top), and must be recognizable as replacement materials. New construction for the sake of filling in apparent lacunae is not allowed.

PASTS: ANASTYLOSIS AND THE CREATION OF THE THAI NATIONAL PAST- John Victor Crocker-<https://openresearch-repository.anu.edu.au/bitstream/1885/7344/6/Crocker-03Volume2.pdf>

Criticism: Such techniques have been used in both the Cambodian and the Indonesian structures. Anastylosis has its detractors in the scientific community. In effect, the method poses several problems:

- no matter how rigorous preparatory studies are, any errors of interpretation will result in errors, often undetectable or incorrigible, in reconstruction.
- damage to the original components is practically inevitable.
- an element may be, or may have been reused in, or may have originated in, different buildings or monuments from different periods. To use it in one reconstruction obviates its use in others.

A primitive anastylosis was carried out in 1836 at the Acropolis in Athens, where the Temple of Athena Nike was re-erected from remaining parts. Starting in 1902, the Greek architect Nikolas Balanos used anastylosis in order to restore a collapsed portion of the Parthenon, restore the Erechtheion, and rebuild the Nike Temple a second time. Iron clamps and plugs which had been used earlier had started to rust and had caused heavy damage to the original

structure. These were removed and replaced with precious metal clamps. When the temple was once again rebuilt additional newly identified original fragments were added. Currently, anastylosis is being applied to the Parthenon.

India

Several monuments protected by Archeological Survey of India have been restored, including Shekhavati havelis, Humayun's Tomb, etc.

Indonesia



One of the earlier examples of anastylosis: the Borobudur in Java, Indonesia

Early in the 20th century, Dutch archaeologists carried out anastylosis of the stupa at the Buddhist temple complex at Borobudur in Java, Indonesia between 1907 and 1911. The Prambanan Hindu temple complex was excavated and was partially reconstructed between 1911 and 1953, also reconstructed using anastylosis method. The recent practice of anastylosis in Indonesia is the reconstruction of Kedulan temple, built in 869, the temple was buried under volcanic layers for centuries, until was discovered in 1993. The restoration of the entire Kedulan Temple complex is expected to be completed by the end of 2018.

The temple—essentially a variation of a step pyramid—is a sanctuary and Buddhist pilgrimage place. The pilgrims' journey starts at the base of the monument and proceeds along a path that surrounds it while climbing to the top through the three levels of Buddhist cosmology; *Kamadhatu* (the world of desires), *Rupadhatu* (the world of forms), and finally *Arupadhatu* (the formless world).

During the trip, the monument guides pilgrims through a system of stairs and corridors.



Prambanan (Javanese: Rara Jonggrang) is a **Hindu temple** complex dating from the 9th century CE located near Bokoharjo, on the island of Java in Indonesia. Prambanan is the largest Hindu temple in Indonesia and one of the largest Hindu temples in Southeast Asia. Dedicated to the Trimurti of **Hinduism** — **Brahma, Vishnu,** and **Shiva** — Prambanan's **architecture** conforms to Hindu architectural traditions based on the Vastu Shastra, and the temple thus reflects the Hindu conceptions of the cosmos in its design and layout. Despite its grandeur and rich exterior ornamentation, the Javanese abandoned Prambanan within 100 years of its completion around c. 950 CE. Although the ravages of time and natural disasters took their toll on Prambanan, the Javanese never forgot the ruins, and Prambanan continued to play a part in Javanese folklore. Research and the restoration of Prambanan began in earnest in the early 20th century CE, and the temple complex was declared a UNESCO World Heritage Site in 1991 CE. It is today one of the most visited historical sites in Indonesia.

History & Geography

Prambanan is located some 17 km (11 miles) northeast of the Indonesian city of Yogyakarta, near the border between the two provinces of Yogyakarta and Central Java, on the island of Java. The ruins themselves lie 0.5 km south of the village of Prambanan.

The period in which the Javanese constructed Prambanan and neighboring temples is shrouded in legend and mystery. Strong cultural and religious influence arrived in what is now present-day Indonesia from the Indian subcontinent, beginning around the 1st century CE. This influence grew rapidly from c. 400 CE onwards. Hindu and Buddhist merchants and traders, settled in the region, intermarried with the local population, and facilitated long-distance trade relations between the indigenous Javanese, ancient India, and the rest of Southeast Asia. Over the centuries, the Javanese blended the culture and religions of ancient India with their own.

Some historians contend that Prambanan's construction began under the orders of King Rakai Pikatan (r. 830-860 CE?) at some point between c. 840-850 CE. Rakai Pikatan oversaw the construction and design of the main temple complex, while other structures were built soon thereafter by later kings, including Rakai Kayuwangi (r. 850-898 CE), Balitung (r. 899-911 CE), Daksa (r. 910-919 CE), and Tulodong (r. 919-924 CE). At some point, locals diverted a nearby river to flow past the temple complex as well. Rakai Pikatan and his successors belonged to the Hindu Sanjaya dynasty, which was the rival of the Buddhist Sailendra dynasty for power in the "Medang" or Mataram kingdom in central Java. It is worth noting that the Sailendra dynasty oversaw the construction of the Buddhist temple of Borobudur. As Borobudur is located only 19 km (12 miles) from Prambanan, some scholars interpret Prambanan's genesis as a direct artistic, political, and religious response to that of Borobudur and in turn the competitive Sailendra dynasty. It is even said that Rakai Pikatan's wife, Princess Pramodhawardhani (fl. 820-860 CE), was the daughter of King Samaratungga (r. 812-833 CE) who may have overseen Borobudur's construction. (Despite all this, other Javanese historians see the "Sailendra" and "Sanjaya" dynasties as one and the same family, interpreting the religious patronage of **Buddhism** or Hinduism as the result of a ruler's personal belief.) **THERE IS A LEGEND THAT A JAVANESE PRINCESS WAS TURNED TO STONE BY HER CRUEL HUSBAND & SO BECAME THE BEAUTIFUL IMAGE OF THE HINDU GODDESS DURGA NOW DECORATING THE TEMPLE'S EXTERIOR.**

Prambanan is a 9th-century Hindu temple compound in Central Java, Indonesia, dedicated to the Trimurti, the expression of God as the Creator (Brahma), the Preserver (Vishnu) and the Destroyer (Shiva). A UNESCO World Heritage Site, it is the largest Hindu temple site in Indonesia, and one of the biggest in Southeast Asia. It is characterized by its tall and pointed architecture, typical of Hindu temple architecture, and by the towering 47-metre-high (154 ft) central building inside a large complex of individual temples. Prambanan attracts many visitors from around the world. The temple compound is located approximately 17 kilometres northeast of the city of Yogyakarta on the boundary between Central Java and Yogyakarta provinces. Others believe that the term "candi" itself is believed was derived from Candika, one of the manifestations of the goddess Durga as the goddess of death. This suggests that in ancient Indonesia the "candi" had mortuary functions as well as connections with the afterlife. Historians suggest that the temples of ancient Java were also used to store the ashes of cremated deceased kings. The statue of god stored inside the garbhagriha of the temple is often modeled after the deceased king and considered to be the deified person of the king portrayed as Vishnu or Shiva according to the concept of devaraja. The example is the statue of king Airlangga from Belahan temple portrayed as Vishnu riding

Garuda. The candi architecture follows the typical Hindu architecture traditions based on Vastu Shastra. The temple layout, especially in central Java period, incorporated mandala temple plan arrangements and also the typical high towering spires of Hindu temples. The candi was designed to mimic Meru, the holy mountain the abode of gods. The whole temple is a model of Hindu universe according to Hindu cosmology

All temples contained in Prambanan temple consist of three parts. These parts, among others, consists of the base of the temple, the body of the temple, and the roof of the temple. This division of building structures is in harmony with the traditions that exist in the ancient Hindu-Buddhist world.

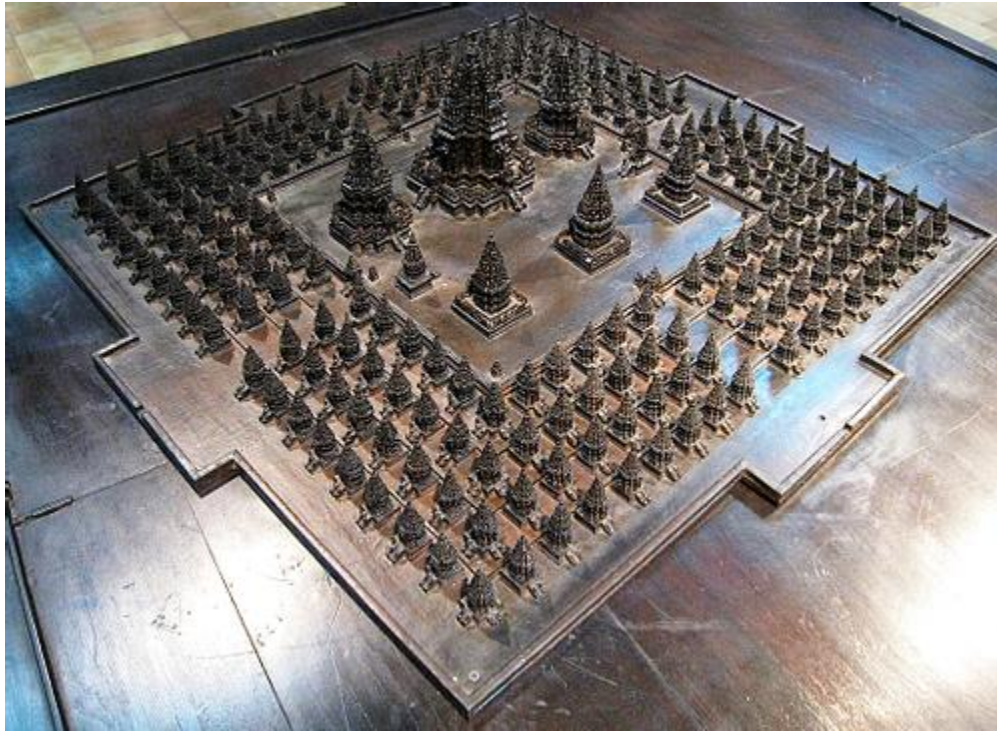
In Shiva Temple, the base is equipped with a nice decorated ledge. This kind of shape reminds anyone who sees it going like to the Borobudur Temple. Each of the four steps leading up to the gates of the monument that has a large Kala head.

This Kala is a monster like a lion very loyalty to God Shiva. In Java, Kala became the most popular protective figure and can be seen in every door and niche.

At Shiva Temple, its east gate is surrounded by two large niches containing the statues of Shiva's gatekeepers, the good Nandhishvara and the ruthless Mahakala. The body of the temple is divided into two by a corridor, a pattern that shows the architecture of East Java. Above and below the corridor, the wall is interspersed with a series of niches with kala and reliefs that bear the roof of the temple above. This architectural figurine, which is quite common in India, is also used as a Buddhist temple niche decoration near this area, Kalasan Temple.

The upper part of Shiva Temple consists of a series of smaller levels that repeat the temple's body shape with a smaller scale. The roof is also decorated by a dome with moon-shaped parts on it and decorated with fake doors, pillars, and motifs of kala. Each dome is a miniature of the temple that holds the basic principle of Hindu-Buddhist thought, the balance between the macro cosmos, which is represented by its temple, and the micro cosmos, represented by its dome.

In Java, Hindu temples usually have box-shaped ornaments on it, while Buddhist temples are usually crowned with stupas. Striped ball ornaments in Prambanan Temple may have prompted the confusion of the first western visitor, so they often regard the Prambanan Temple complex as a Buddhist monument. Thus, parts of the temples that exist in Prambanan not only a mere architectural process. Moreover, the parts that are divided into three contain symbolic meanings that make Prambanan Temple as evidence of cultural life that existed in the past.



Prambanan Complex Model-by Gunawan Kartapranata (CC BY-SA)

Prambanan, an Hindu temple in Indonesia-general architectural and morphological analysis-Srishti Dokras.Uday Vasant

Dokrashttps://www.researchgate.net/publication/342662695_Prambanan_an_Hindu_temple_in_Indonesia-general_architectural_and_morphological_analysis

Cooperation between Khmer and Javanese? According to ancient Khmer sources, King Jayavarman II (r. 802-835 CE), the founder of the Khmer Empire (802-1431 CE), spent much of his life in Java, and was appointed by Samaratunga as the governor of Indrapura, which later became the capital city of Champa around c. 875 CE. It is said that Jayavarman visited both Borobudur as well as Prambanan, which inspired him to build the city of Angkor Wat on a grand scale. This is quite possible as the Sailendra and Sanjaya dynasties exerted much political and cultural influence through their thalassocracies in what is present-day Java, Sumatra, Malaya, and southern Cambodia in the 8th, 9th, and 10th centuries CE.

ABANDONEMENT: VOLCANIC ERUPTIONS FROM MOUNT MERAPI IN THE 10TH CENTURY CE & COUNTLESS EARTHQUAKES MAY HAVE IMPACTED PRAMBANAN'S APPEAL AS A PLACE OF WORSHIP & PILGRIMAGE.

Prambanan's abandonment mirrors that of nearby Borobudur. As the center of political power shifted from central to eastern Java under the reign of King

Mpu Sindok (fl. 928 CE), Prambanan became less important politically and culturally to the ancient Javanese. The Sanjaya dynasty had successfully usurped power from the Sailendra dynasty, leaving the island of Java under their near complete suzerainty. Volcanic eruptions from Mount Merapi in the 10th century CE and countless earthquakes may have impacted Prambanan's appeal as a place of worship and pilgrimage as well among the Hindu faithful.

Over time, Prambanan deteriorated and became surrounded by a dense jungle. The Dutch explorer C. A. Lons reported his “rediscovery” of Prambanan in 1733 CE to Dutch colonial officials, but the temple was never completely forgotten by the Javanese in their histories, myths, and legends. A very popular Javanese legend is that of Rara Jonggrang, which is set in Prambanan and its neighboring temples. In the legend, a Javanese princess is turned to stone by her cruel husband. The princess is said to be beautiful image of the Hindu goddess Durga located within the north wing of Shiva's temple at Prambanan. Restoration work began in 1885 CE, but accelerated in 1918 CE. These efforts were halted when Indonesia was invaded in 1941 CE by the Japanese during World War II. In 1953 CE, the Temple of Shiva was reconsecrated to Hindu believers, and Prambanan was restored once again following the 2006 CE Yogyakarta earthquake. Intermittent archaeological excavation and restoration continue in and around Prambanan today.

Set in the fertile Prambanan Plain, Prambanan is but one of 30 temples built between c. 750-950 CE in a 30 square km (11.5 square miles) area. Lying just a few kilometers to Prambanan's north are three ancient Buddhist Temples built in the 8th century CE — Lumbung, Bubrah, and Sewu — while 2.5 km to Prambanan's south and southeast lie the ruins of the 9th-century CE Buddhist temples of Ratu Boko and Sojiwan, respectively. Some 3 km to Prambanan's west are also the 8th-century CE Buddhist Sari Temple, the Kalasan Temple, which dates to c. 778 CE, and the Sambisari Temple, which dates from the 9th century CE and is dedicated to Shiva.

Prambanan consists of six temples all situated in an elevated courtyard, which is in turn encompassed by 224 minor temples now ruined. The greater the distance a temple is from the main complex, the smaller it is in height and space. A small wall surrounds the smaller temples, just as a large wall encompasses the main complex. Prambanan has a 47 m (154 ft) tall central temple — dedicated to Shiva — which sits inside a complex of other temple structures in a concentric mandala layout. Prambanan, in ways similar to Borobudur, delineates the celestial hierarchy and transposes them to three distinct temple zones. Horizontally and vertically, Prambanan exudes Hindu conceptions of heaven.

The largest three temples, the holiest sites within the main complex, are dedicated to the triad of Hindu gods. Shiva's temple is the most prominent with Brahma's temple lying to the south of Shiva's temple, and Vishnu's temple

lying to the north of Shiva's temple. Directly parallel to these magnificent temples are three smaller temples, each dedicated to mythological animal figures that provide protection, companionship, and transportation to the aforementioned gods: Garuda, a mythical winged creature, Hamsa the swan, and Nandi the bull.

The Temple of Shiva is the most ornate of the three massive temples, containing a series of elegant carvings along the inner wall, which depict the scenes from the ancient Indian epic *The Ramayana*. This temple contains four rooms, including an inner sanctuary with a statue of Shiva, while another chamber near the inner sanctuary contains a large statue of Shiva's son, Ganesha. The southern room of Shiva's temple is dedicated to Batara Guru who, according adherents of Javanese Hinduism, is an avatar of Shiva that gives prophecy, presents, and other human abilities. There is also a statue of the sacred bull calf, gatekeeper, and vehicle (*vahana*) of Shiva, Nandi, which sits in front of the Temple of Shiva. The walls in the Temple of Brahma continue the narration of *The Ramayana*, while the Temple of Vishnu is decorated with carvings retelling the epic battles of **Krishna** along its terrace.

Did You Know The Prambanan Temple Is The Largest Hindu Temple Site In Indonesia With 240 Temples?



Image Courtesy: World Travel Bug-by Gizel Menezes April 30, 2020 1018

Indonesia is known to be a melting pot of ancient traditions, cultures, and history and is home to some of the world's most marvellous architectural structures. One of these is the Prambanan Temple. Built in the 9th century, it is the largest Hindu temple complex in Indonesia, housing about 240 temples structures. The temple is a UNESCO World Heritage site and is dedicated to the Trimurti – Shiva (the Transformer), Vishnu (the Preserver), and Brahma (the Creator). The highlight of the temple lies in the central compound, where eight major and eight minor temples are assembled on a raised platform, creating an

architectural crescendo, the highest of which is Candi Shiva Mahadeva. 'Candi' means temple or shrine.



Image Courtesy: Temple Purohit

History Of The Prambanan Temple

The building of Prambanan commenced in the middle of the 9th century, around 50 years after Borobudur, which is the largest Buddha temple in the world. While little is known about the early history of the temple, it is thought to have been built by Rakai Pikatan to commemorate the return of the Hindu dynasty in Java. However, in the mid-16th century, a great earthquake toppled many of the temples, and Prambanan remained in ruins for years. While efforts were made to clear the site in 1855, it was only in 1937 that reconstruction was first attempted. In 1953, the reconstruction of the main Shiva temple was completed and inaugurated by an Indonesian politician Sukarno. Prambanan again suffered extensive damage in the 2006 earthquake. Although the main temples survived, hundreds of stone blocks collapsed. Today, the main structures have been restored, but a lot of work remains to be done.

Architecture Of The Prambanan Temple

The temple follows the typical Hindu architectural traditions based on the Vastu Shastra and has incorporated the Mandala temple plan arrangements. The whole complex contains 240 individual stone temples, many of which are scattered in ruins. The temple complex is divided into three zones. The outer zone is an open space, which serves as a yard for priests or worshippers, whereas the middle zone has 224 small shrines arranged into four concentric rows around the central compound. These shrines are called Candi Perwara, meaning 'guardian temples'.



Image Courtesy: All Indonesia Tourism

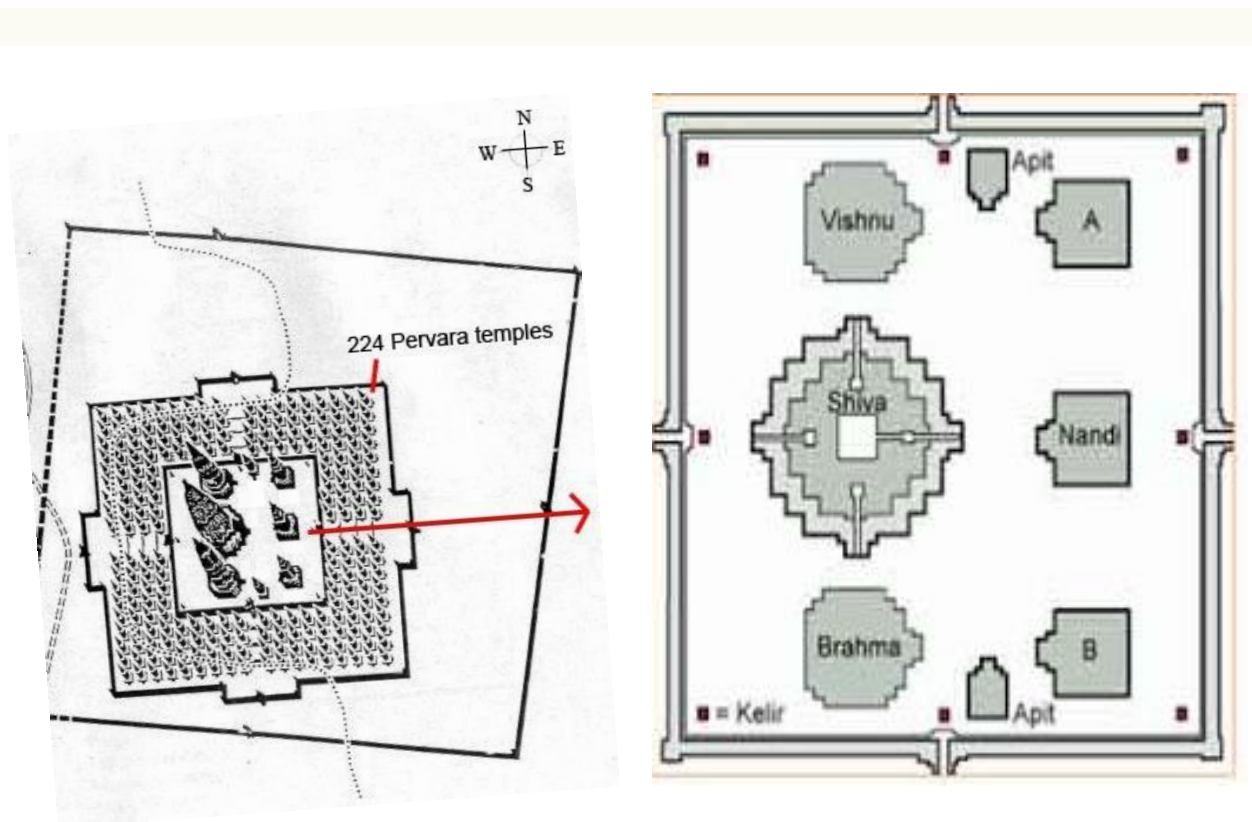
The Candi Shiva Mahadeva is centrally located and is one of the finest temples in the complex. Lavishly carved, the main spire of the temple soars as high as 47m high. The inner wall of the gallery encircling the temple contains vibrant scenes from the Ramayana. The impressive Candi Vishnu touches 33m and sits north of Candi Shiva Mahadeva. It houses a four-armed image of Vishnu inside the inner sanctum. Candi Brahma is Candi Vishnu's twin temple. Located south of Candi Shiva Mahadeva, it is again adorned with the final scenes of the Ramayana. In the inner chamber, a four-headed statue of Brahma is beautifully crowned. The Prambanan Temple, on the whole, attracts many visitors from around all the world all year round! You too must visit this architectural brilliance once in your life and experience divinity and calm like no other!

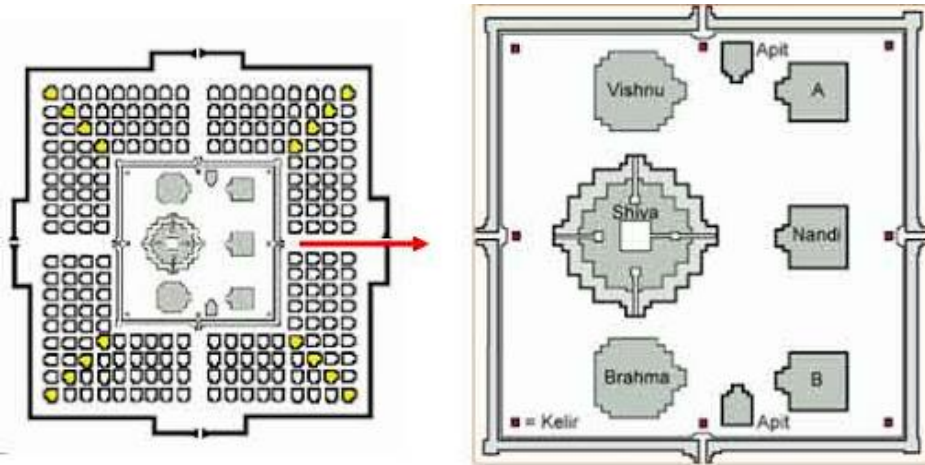
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Architectural temples of the middle classical era such as Prambanan and Borobudur temples are thought to have inspired the temples in Indochina. It has become a common guess both among the tour guides in Cambodia or the researchers who reviewed the Khemer Kingdom Architecture. The existence of the relationship between the temple in Java and the temple in Cambodia is possible because Jayawarman II, who later build the kingdom of Khemer, once lived in Java when large middle classical temple style architecture was built. To find out the architectural connections of temples in Java and in Cambodia then the first thing to do is to know all the architectural unsurts in both temples. So the purpose of this study is to know the unsurts of spatial, plan, figures and temple ornaments of the middle classical era of Java and pre-Angkor temple era.

This research is done by qualitative method of comparative. Qualitative research is applied by visiting and observing physical objects, then discussed using theories relating to research topics. While the object is selected using purposive sampling method, with the basic object of research is closely related to the style, wholeness and scale. Of the 80 points used in identifying architectural unsurts in the mass structure, floor plan, figures, and ornaments, the authors found 13 very similar points, 50 points to Bakong but not similar, and 17 points missing from Bakong. Based on these results the allegation that the temple of the middle classical era of Java has a relationship with the transitional era are becoming stronger¹

Consecration of bakong: Bakong on the other hand was consecrated in 881, during the reign of Indravarman (877-889). This is the first of the temple-pyramids, which later became standard for all Khmer kings. It is a temple as well as a symbol of the king's reign and the magnitude of his power. On the walls of the three decreasing rectangular terraces we can identify the series of reliefs which has already pleased our eyes in Angkor Wat and Bayon. Unfortunately, in Bakong galleries do not protect the reliefs, thus the ornaments on the are hardly distinguishable on the few centimeters of intact, adjoining surfaces. On the corners of the terraces we can see battle elephants; the stairway leading to the main sanctuary, like in all the later Khmer temples, is decorated with stylized lions.

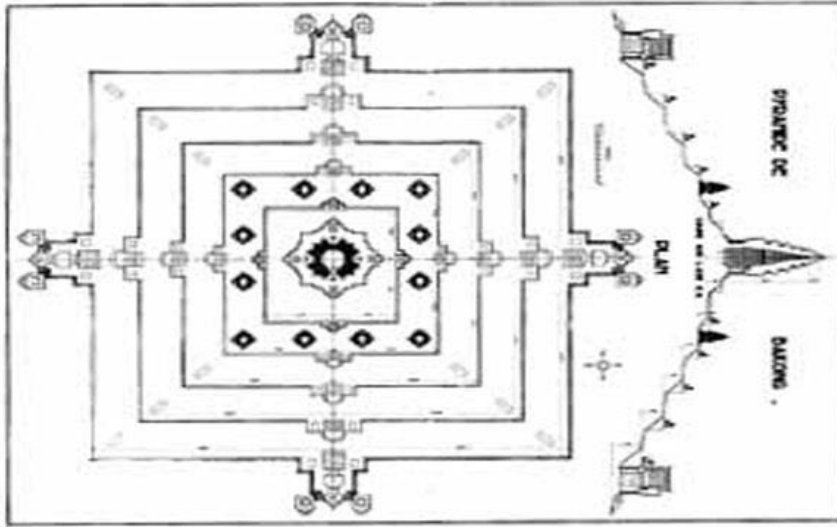




1. THE IDENTIFICATION OF CENTRAL JAVA CLASSIC ERA'S ARCHITECTURE (BOROBUDUR AND PRAMBANAN, 9TH CENTURY) ON THE TEMPLE IN THE CAMBODIA'S TRANSITIONAL ERA (BAKONG, 9TH CENTURY) MORPHOLOGICAL TYPOLOGY STUDIES (MASS ORGANIZATION, FLOOR PLAN, FIGURE AND ORNAMENTS). *Galih Andika Pratomo ; Rahadhian Prajudi Herwindo*

Daerah Istimewa Yogyakarta is a well-known city in Java Island, Indonesia. Yogya (as it is usually called) has a unique charm, which is felt on every visit. Every one who goes there returns with wonderful memories, making Yogya a good site for tourism. Prambanan Temple is the product of phenomenal artistic labour in Yogya, built on Kingdom of Mataram Kuno in the ninth – tenth century. It was in Sanjaya Dynasty (when Rakai Pikatan and Rakai Balitung are governing the Kingdom).

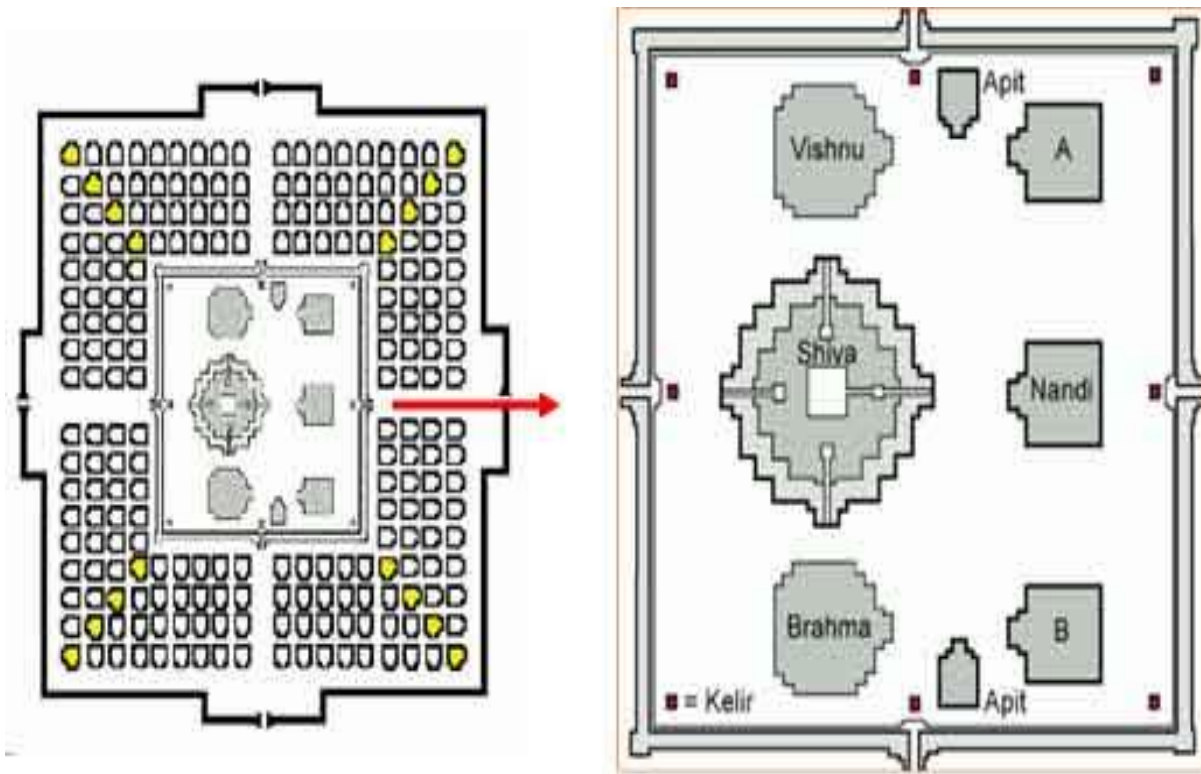




Bakong



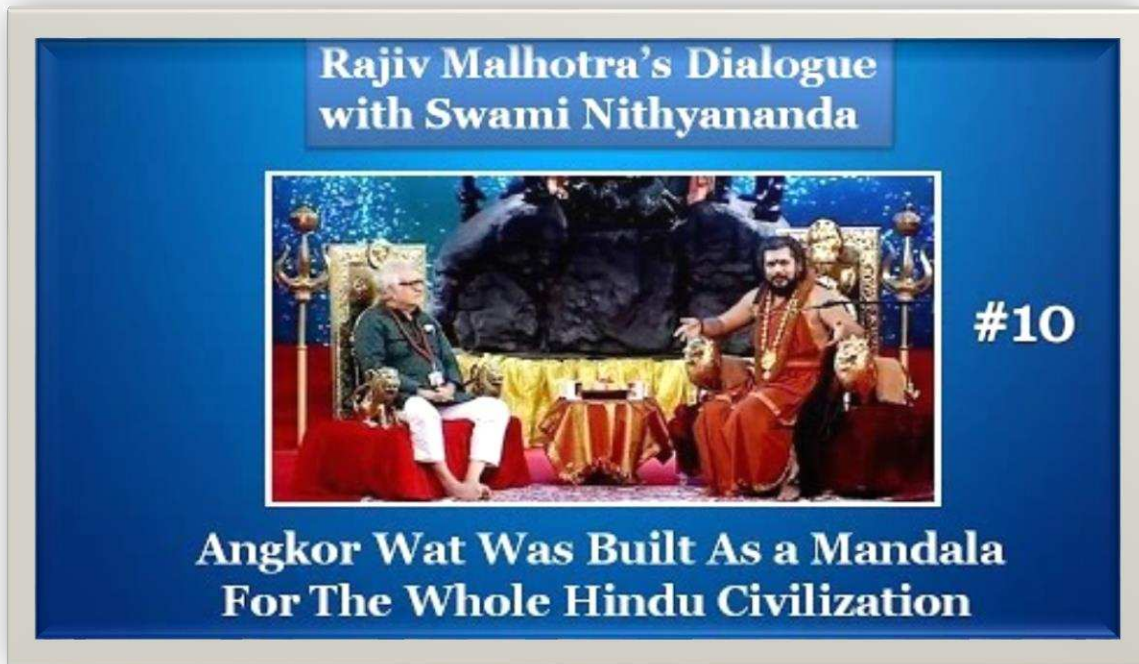
Prambanan Temple has 1,000 statues, three main temples in front center (primary yard) with bigger than others, namely Vishnu, Brahma, and Shiva Temples. Those three temples are symbols of 'Trimurti' (Tri = tiga = three; Murti = dewa = God in Hindu belief; (English: 'three forms'; Sanskrit: trimurti) is a concept in Hinduism in which the cosmic functions of creation (dewa Brahma), maintenance (dewa Vishnu), and destruction (dewa Shiva). These three deities have been called "the Hindu triad" or the "Great Trinity,". All of the temples face the east. Besides, there are 2 flank temples, 4 kelir temples, 4 corner temples and other smaller temples are around of the three main temples. See Map below.



According to the legend, Prambanan temple was built due to a love affair legend. When Prince Bandung Bondowoso asked for Roro Jonggrang to marriage him, she doesn't want, because he killed King Ratu Boko (Jonggrang fathers), so Jonggrang asked to Bondowoso an impossible task: build temple with 1,000 statues in one night. If he fulfilled the task, he could marry her. The request was nearly fulfilled when Jonggrang asked the villagers to pound rice and to set a fire in order to look like morning had broken. Feeling cheated, Bondowoso, having only completed 999 statues, and cursed Jonggrang to be the thousandth statue. Through the intervention of Shiva, the petrified body became the idol or mascot that now stands in the north of the "Shiva Temple" at Candi Prambanan..

CHAPTER IX

Temple Mountain as Cosmos & spiritual light -house



In early days, Temples and Stupas served as the major landmarks of the land. They were no Mountains in India _ I mean TEMPLE MOUNTAINS but each temple was tall and could be sighted from afar by the devotees- a Beacon or light house to guide the traveler on the Divine Path.

A place was recognized either using the palaces or temples from afar due to their height or social and cultural placement. As the palaces were prone for being ruined due to assault, temples served as the chief landmark for the passengers travelling on foot or carriages from afar. It was a beacon- a light house to guide the visitors. Many served as Guest Houses for travelers especially priests and missionaries or just as identifiable marks on the landscape-“ Where is the konark Stupa? ‘ Oh There on the right”

ELEMENTS OF HINDU TEMPLE ARCHITECTURE

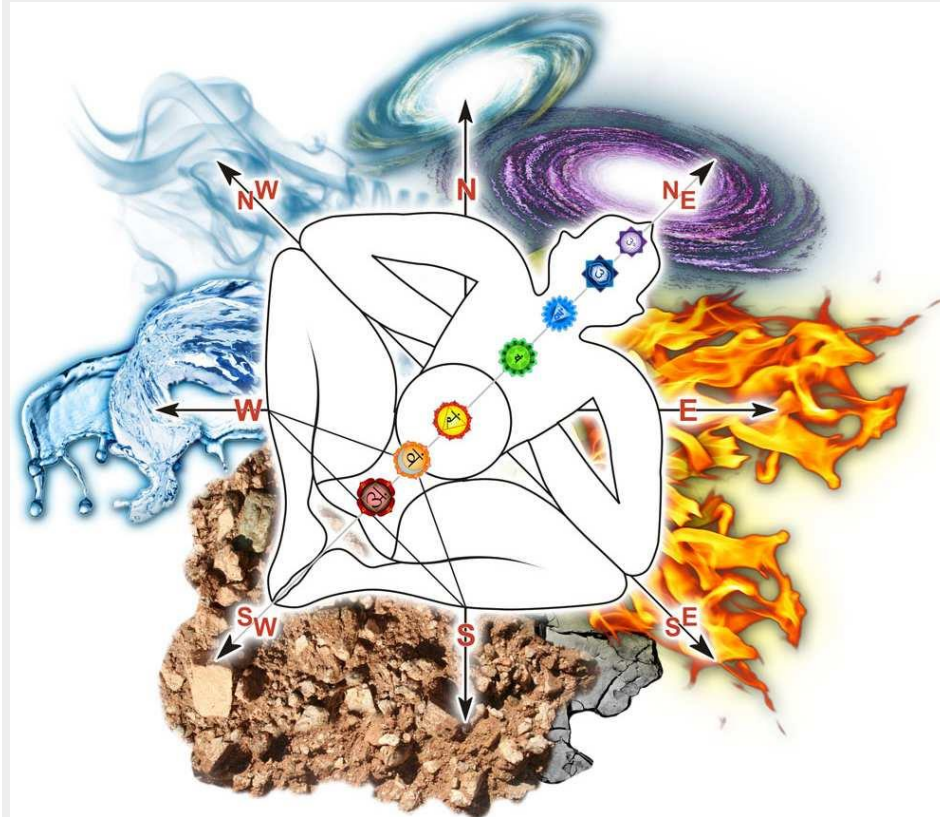
It was the later half of the 7th century that the Hindu temple structures of India began to acquire a definite form with consolidation of design structures all over India.

Elements of Hindu temple:

1. Ardhamandapa' meaning the front porch or the main entrance of the temple leading to the mandapa. It unites the main sanctuary and the pillared hall of the temple. 'Antarala' meaning the vestibule or the intermediate chamber.
2. 'Garbhagriha' meaning the womb chamber. The shape and the size of the tower vary from region to region. It is the pyramidal or tapering portion of the temple which represents the mythological 'Meru' or the highest mountain peak. 1. 'Sikhara' meaning the tower or the spire. The devotees walk around the deity in clockwise direction as a worship ritual and symbol of respect to the temple god or goddess. There is an enclosed corridor carried around the outside of garbhagriha called the Pradakshina patha' meaning the ambulatory passageway for circumambulation Garbhagriha (cella or inner chamber). the lower portion inside the Vimana is called Shikhara and upper as the Vimana is called as the Sikhara . The visitors are not allowed inside the The chamber is mostly square in plan and is entered by a doorway on its eastern side. It is nucleus and the innermost chamber of the temple where the image or idol of the deity is placed.
3. 'Gopurams' meaning the monumental and ornate tower at the entrance of the temple complex, specially found in south India
4. 'Mandapa', is the pillared hall in front of the garbhagriha, for the assembly of the devotees. In some of the earlier temples the mandapa was an isolated and separate structure from the sanctuary known as 'Natamandira' meaning temple hall of dancing, where in olden days ritual of music and dance was performed. It is used by the devotees to sit, pray, chant, meditate and watch the priests performing the rituals.
5. The Amalaka the fluted disc like stone placed at the apex of the sikhara.
6. 'Toranas', the typical gateway of the temple mostly found in north Indian temple
7. 'Pitha' , the plinth or the platform of the temple



In order to make easy the roaming folk to recognize the locations easily, the Gopuram's of the temples had to be built elevated. That tiled way for the elevated Gopuram's. By way of seeing the Gopuram's form expanse, passengers planned the approximate distance of their target from their location. Gopuram's were built extremely high to serve as landmarks as well as for traveler distance's.



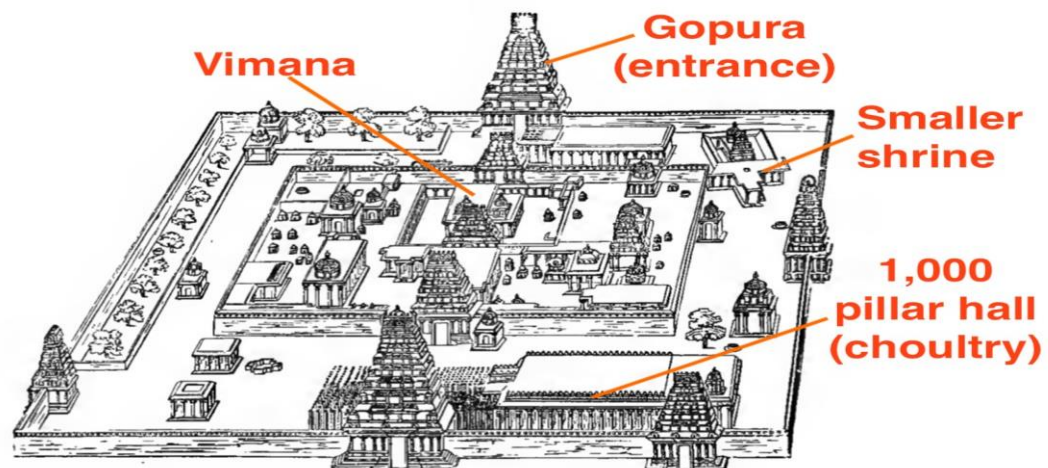
Additionally, temples served as the main protection for travelers. When people travel between places, they stay at the temple building to take rest. Before they commence the new part of their journey, they would respect God and begin. Representatively, the **Temple Gopuram** or the access to the temple represents the feet of the divinity. A devotee bows at the feet of the Lord at the entry as he steps into the temple and proceed towards the chamber, leaving behind the world of contradiction. A *Gopura* is usually constructed with an enormous stone base and a superstructure of brick and support. It is rectangular in sketch and topped by a barrel-vault roof crowned with a row of finials. When viewed from apex, the Gopura too resembles a mandala; with sculptures and carvings of Yalis and mythological animals to be found in the outer enclosed space. Humans and divine beings are in the central enclosures. The crest of the *Gopura*, the *Kalasha*, is at the centre of the *Mandala*. These sculptures follow a selection of themes resulting from the Hindu mythology, mainly those associated with the presiding idol of the temple where the *gopuram* is positioned. Gopuras come into view to have inclined revision in the temple plan

and outline. The spaces just about the shrine became hierarchical; the further the space was from the central shrine, the lesser was its distinction. The farthest ring had buildings of a more practical or a secular nature – shops, dormitories, sheds, workshops etc., thus transforming the temple from a merely place of worship to the center of a vibrant alive city.

A **mandala** (emphasis on first syllable; Sanskrit मण्डल, maṇḍala – literally "circle") is a geometric configuration of symbols. In various spiritual traditions, mandalas may be employed for focusing attention of practitioners and adepts, as a spiritual guidance tool, for establishing a sacred space and as an aid to meditation and trance induction.

In the Eastern religions of Hinduism, Buddhism, Jainism and Shintoism it is used as a map representing deities, or specially in the case of Shintoism, paradises, kami or actual shrines.

In New Age, the mandala is a diagram, chart or geometric pattern that represents the cosmos metaphysically or symbolically; a time-microcosm of the universe, but it originally meant to represent wholeness and a model for the organizational structure of life itself, a cosmic diagram that shows the relation to the infinite and the world that extends beyond and within minds and bodies.



Temple at Tiruvallūr (from Rām Rāz's Essay on the Architecture of the Hindus).

MANDALA:

Religious meaning

In Hinduism, a basic mandala, also called a *yantra*, takes the form of a square with four gates containing a circle with a center point. Each gate is in the general shape of a T. Mandalas often have radial balance.



A *yantra* is similar to a mandala, usually smaller and using a more limited colour palette. It may be a two- or three-dimensional geometric composition used in *sadhanas*, puja or meditative rituals, and may incorporate a mantra into its design. It is considered to represent the abode of the deity. Each *yantra* is unique and calls the deity into the presence of the practitioner through the elaborate symbolic geometric designs. According to one scholar, "Yantras function as revelatory symbols of cosmic truths and as instructional charts of the spiritual aspect of human experience"

Many situate *yantras* as central focus points for Hindu tantric practice. *Yantras* are not representations, but are lived, experiential, nondual realities. As Khanna describes:

Despite its cosmic meanings a *yantra* is a reality lived. Because of the relationship that exists in the Tantras between the outer world (the macrocosm) and man's inner world (the microcosm), every symbol in a *yantra* is ambivalently resonant in inner-outer synthesis, and is associated with the subtle body and aspects of human consciousness.

The term 'mandala' appears in the Rigveda as the name of the sections of the work, and Vedic rituals use mandalas such as the Navagraha mandala to this day.

The science behind these constructions is that, the temple architecture gives cosmic force to the main idol in the Garbha Griha. Firstly, the Juathaskambam acts like an antenna and receives the cosmic force from the space and through a subversive channel it is linked to the main idol in the Garbha-graha. The cosmic force continuously flows through the Jathuskambam to the statue and energizes it. Secondly, the celestial power fetched through the field gives the idol effulgence and metaphysical powers. The cosmic-force is additionally maintained by noise waves (Vedic chants – Read about the Significance of Chanting) and the pyramid like tomb. The pyramid like construction helps to intensify and protect the cosmic force. These are the reasons for anybody to feel a positive energy, goodness, serenity or divinity when we approach the interior sanctum.

The copper plate has the propensity to suck part the Ether when that penetrates from the copper and the Herbal resulting in powerful atomic force that penetrates through the skin to heal the human, and that's why the copper plate is put on the temple tower.

The idol is washed with various materials (milk, sandal paste, oil) to preserve the idols. The idol is adorned with flowers and ornaments for mental and visual boost. But the diverse postures of the idol (sitting/standing, number of hands, weapons they hold) do have meaning in emitting the cosmic force.

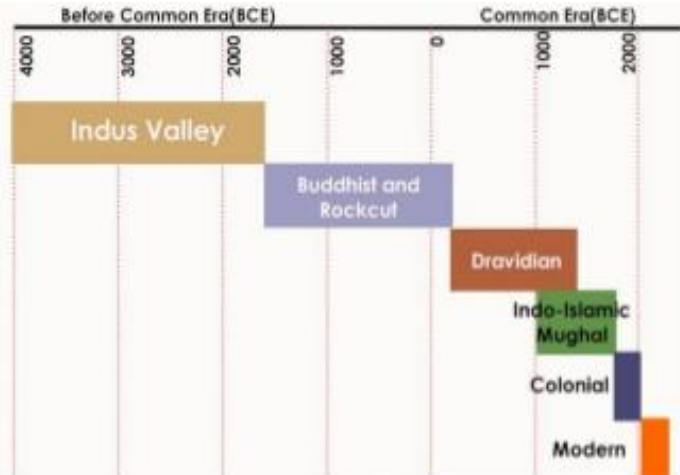
Thus the temples serve up as the scientific room to receive the shower of cosmic force or God's blessing.

From my understanding Temple Gopurams are an important part of any Hindu temples and there are specific reasons for their existence. They are:

- 1) Temple Gopurams are built to receive the positive energy from the universe. Cosmic rays will be received by the Gopuram and it will be passed to the statue in the temple.
- 2) Gopuram will also receive the energy from thunder/lightning and pass it to the ground. So it acted as a layer of protection for the temple and the nearby areas.
- 3) Temple Gopuram were built largely to depict the culture and art of ancient people
- 4) It also used to act as a landmark in olden days to find out the cities, way to different places.
- 5) In olden days , kings built temples in order to give job to the people of the country and along with that future generations will come to know the architectural talents that ancient people had.
- 6) The small carvings and statues in temple gopuram depict the story of the god and also will show life lessons.

Buddhist Architecture-Viharas BUDDHIST ARCHITECTURE

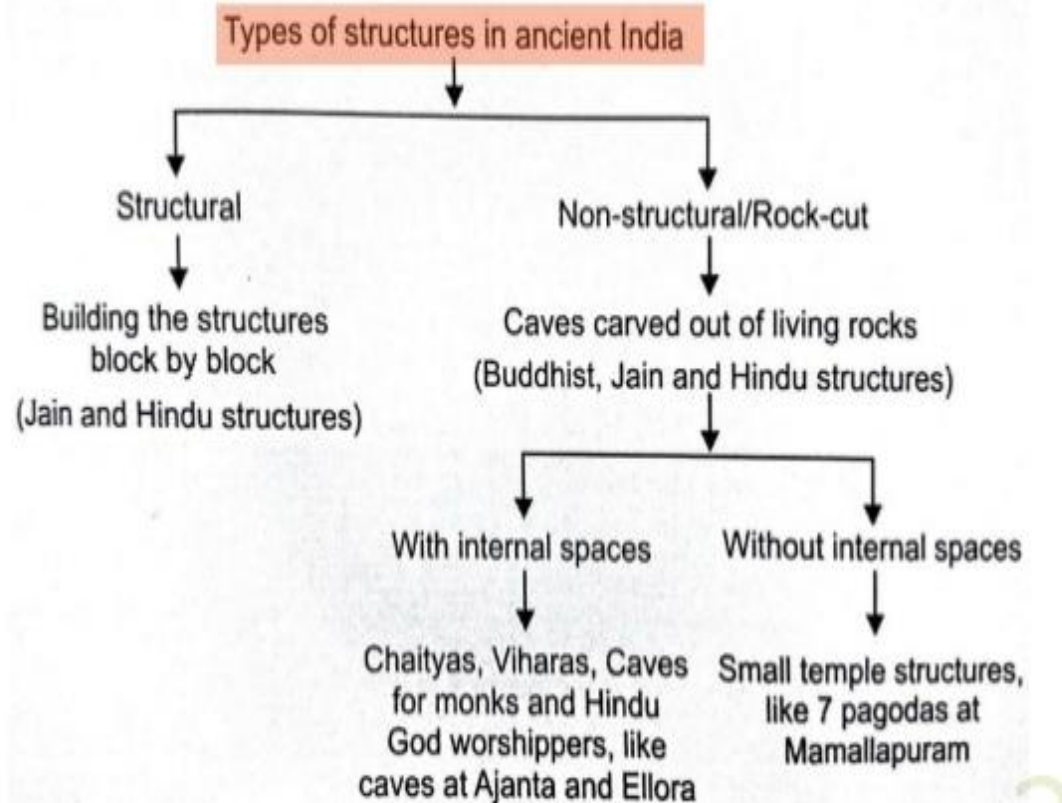
History Timeline



- *Vedic Civilization : 5000 B.C.*
- *Indus & Saraswati Civilizations : 2500 - 1000 B.C.*
- *Birth of Jainism and Buddhism 563 - 400 B.C.*
- *Golden Age of Indian Unity & Govt : Mauryan Dynasty : 325 - 175 B.C.*
- *Golden Age of Indian Arts & Sciences : Gupta Dynasty : 300 - 650 A.D.*
- *Regional Kingdoms and Muslim Invasions : 700 – 1200 A.D.*
- *The Mughal Empire : 1300 - 1700 A.D.*
- *The British East-India Company : 1600 A.D.*
- *The British Empire : 1700 - 1900 A.D.*
- *India's Freedom Struggle : 1857 - 1947*
- *Independence : 1947*
- *Modern India 2020 Vision : 20th and 21st Century*

The early structures that were built during the empires were permanent in nature and long lasting. Non-Structural or rock-cut means that they were carved out of mountain cliff or huge rocks.

The Buddhist Architecture began with the development of various symbols, representing aspects of the Buddha's life(563BCE- 483BCE). Indian Emperor Ashoka, not only established Buddhism as the state religion of his large Magadh empire, but also opted for the Architectural monuments to spread Buddhism in different places. The major features of this style are Stupas, Stambhas, Chaityas, Viharas. Beginning of Buddhist architecture in India was in the 3rd century BCE.. Three types of structures are associated with the religious architecture of early Buddhism: monasteries



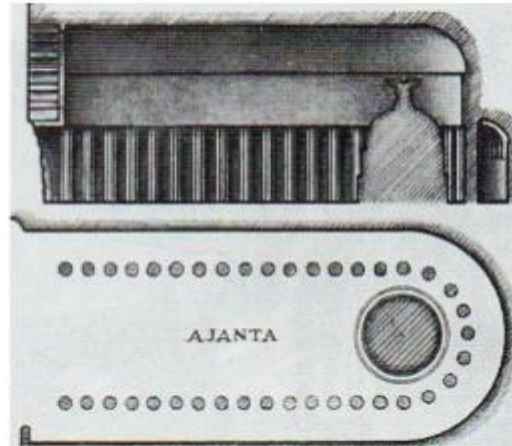
1. (Viharas), places to venerate relics
2. (stupas), and shrines or prayer halls
3. (chaityas also called chaitya grihas), which later came to be called temples in some places.

This religion initially did not involve making of figures or idols but gradually the followers started making sculptural representations of Buddha. There are 2 phases of Buddhism:

1. HINAYANA- 2ND CENTURY BC- 2ND CENTURY AD
2. MAHAYANA- 3RD CENTURY AD – 7TH CENTURY AD

Viharas initially were only temporary shelters used by wandering monks during the rainy season, but later were developed to accommodate the growing and increasingly formalized Buddhist monasticism(monkhood). An existing example is at Nalanda (Bihar). The initial function of a stupa was the veneration and safe-guarding of the relics of the Buddha. The earliest surviving example of a stupa is in Sanchi (Madhya Pradesh). In accordance with changes in religious practice, stupas were gradually incorporated into chaitya-grihas (prayer halls). These reached their high point in the 1st century BC, exemplified by the cave complexes of Ajanta and Ellora (Maharashtra). The Pagoda is an evolution of the Indian stupa. Buddhist architecture in India

- 100ft by 40ft by 33ft
- Same roof ribs
- Two tiered stupa with circular base and elongated dome



Cave No 10 at Ajanta

Buddhist architecture emerged slowly in the period following the Buddha's life, along with the Hindu temple architecture. Brahmanist temples at this time followed a simple plan – a square inner space, the sacrificial arena, often with a surrounding ambulatory route separated by lines of columns, with a conical or rectangular sloping roof, behind a porch or entrance area, generally framed by freestanding columns or a colonnade. The external profile represents Mount Meru, the abode of the gods and centre of the universe. The dimensions and proportions were dictated by sacred mathematical formulae. This simple plan was adopted by Early Buddhists, sometimes adapted with additional cells for monks at the periphery (especially in the early cave temples such as at Ajanta, India). The basic plan survives to this day in Buddhist temples throughout the world. • The profile became elaborated and the characteristic mountain shape seen today in many Hindu temples was used in early Buddhist sites and continued in similar fashion in some cultures. • In others, such as Japan and Thailand, local influences and differing religious practices led to different architecture. Gupta period temple at Sanchi besides the Apsidal hall with Maurya foundation Evolution of Buddhist Architecture Early Buddhist Architecture.

Early Buddhist temples: Early temples were often timber, and little trace remains, although stone was increasingly used. Cave temples such as those at Ajanta have survived better and preserve the plan form, porch and interior arrangements from this early period. As the functions of the monastery-temple expanded, the plan form started to diverge from the Brahmanist tradition and became more elaborate, providing sleeping, eating and study accommodation. A characteristic new development at religious sites was the stupa. Stupas were originally more sculpture than building. • One of the earliest Buddhist sites still

in existence is at Sanchi, India, and this is centred on a stupa said to have been built by King Ashoka (273-236 BCE). The original simple structure is encased in a later, more decorative one, and over two centuries the whole site was elaborated upon. The four cardinal points are marked by elaborate stone gateways. As with Buddhist art, architecture followed the spread of Buddhism throughout south and east Asia and it was the early Indian models that served as a first reference point, even though Buddhism virtually disappeared from India itself in the 10th century. The Borobudur Temple, Indonesia Buddhist Temple during Gupta Period.


Decoration of Buddhist sites became steadily more elaborate through the last two centuries BCE, with the introduction of human figures, particularly on stupas. However, the Buddha was not represented in human form until the 1st century CE. Instead, aniconic symbols were used. This is treated in more detail in Buddhist art, Aniconic phase. It influenced the development of temples, which eventually became a backdrop for Buddha images in most cases. Temples became Backdrop for Buddha images Buddhisttemples

Architectural History FEATURES OF BUDDHIST ARCHITECTURE

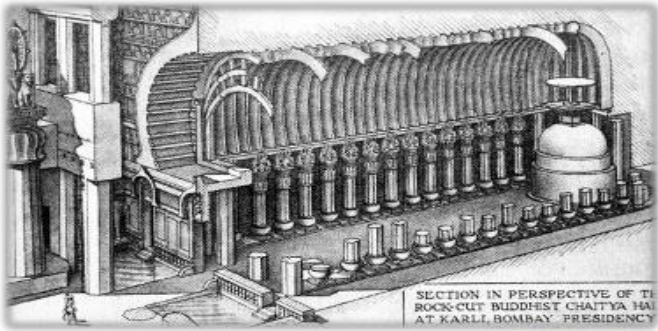
The major features of this style are: Stupas (Buddhist shrine) Stambhas (Pillars) Chaityas (Caves) Vihaaras (Monasteries) • Out of these, the prominent examples of Chaitya Hall and Viharas can be found in Rock-Cut Architecture. Even the Stupa can be found in certain Chaitya halls in a miniature form. Features of Buddhist architecture.

Vihaaras (MONASTRIES)

- They were the residential places of the Buddhist priest(monks).
- The main hall was entered through a doorway, leading to an assembly hall, dining chambers and meditation cells.
- The walls depict figures of the Buddha.
- The columns were of 60 meters height and well-chiselled.



Typical Plan of a Vihaara
PRESENTATION BY- AR, ROOPA CHIKKALGI



SECTION IN PERSPECTIVE OF THE
ROCK-CUT BUDDHIST CHAITYA HALL
AT KARLI, BOMBAY PRESIDENCY

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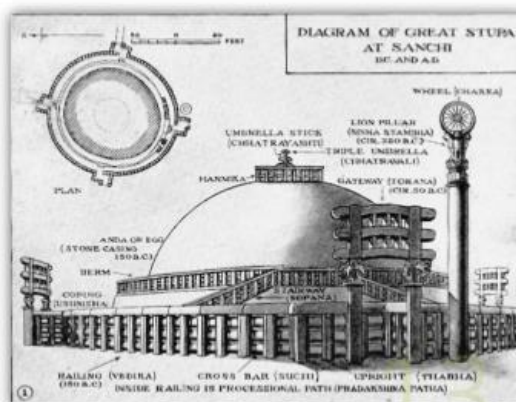
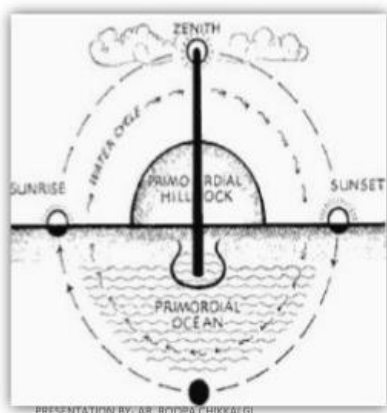
Stupas (domes) DEFINITION: Dome-shaped structures used to house sacred relics of the monks and hence also known as “Relic-shrines”. CONSTRUCTION MATERIALS: Earth materials covered with stones or bricks. The plan, elevation and the basic structure all derived from the circle. STUPA IS MOUND OF THE EARTH ENCLOSING A RELIC CAN BE COMPARED WITH THE MASSIVE FORM OF THE GREAT PYRAMIDS OF EGYPT. THEY ALSO CALLED AS THUPPA IN PALI, DAGABA IN SIMBALI, TOPE IN ENGLISH & DHATUGRABH IN SANSKRIT.(DHATUGRABH=RELICS PRESERVED IN VESSEL CLASSIFIED INTO THREE TYPES.:

1. SARIKA STUPA-raised over body relics.
2. PARIBHOJKA STUPA - erected over the articles, like the bowl, the sanghati
3. UDDESHIKA STUPA- Stupas built as commemorative monuments.

Structural Features: The spherical dome symbolized the infinite space of the sky. The dome is called as anda or egg. The dome is a solid brick work is 36.60M in dia, and 16.46M high. • A large hemispherical dome which is flat at the top, and crowned by a triple umbrella or Chattra on a pedestal surrounded by a square railing or Harmika. A railing enclosed called Vedica which is about 3.35 M high leaving an ambulatory passage or pradikshina path with the gateways. The upper ambulatory passage (midhi) 4.87M high from the ground and 1.8M wide. There are four gateways known as Toranas at the cardinal points of the campus. Toranas built by ivory or metal worker. Elevation Plan.

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PLANNING OF SANCHI STUPA

Stone vedicaUpper Ambulatory 1.8m wide3.35m high Harmika or triple umbrella Suchi 60 cm dia Urdhava patas 45cm dia 60-90 cm/c Ushnisha Steps leading to upper ambulatoryLower Ambulatory 3.35 m. high.

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Toranas at Sanchi Toranas are associated with Buddhist stupas like the Great Stupa in Sanchi, as well as with Jain and Hindu structures, and also with several secular structures. In the 1st century BCE, four elaborately carved toranas (ornamental gateways) and a balustrade encircling the entire structure were added around the sanchi stupa built during Mauryan period.

Stambhas (pillars) The next development was the free standing monolithic columns erected over sites selected because of their sacred associations. They were basically stone objects.

DEFINITION: In the context Of Hindu Mythology, stambha, is believed to be a cosmic column. **DESIGN:** A stambha consists of a circular column or shaft slightly tapering towards the summit (monolithic). On top of this shaft is the Persepolitan bell or the inverted lotus shaped base. Above this is the abacus on top of which rests the crowning sculpture. These three portions were carved out of a single stone (monolithic). The famous iron pillar from the Gupta period is a fine specimen, withstanding exposure to rain & storm, yet remaining smooth and unruined bearing testimony to the mastery of Indian metal-casting.

Iron Pillar Ashokan Pillar

CHAITYAS -A Buddhist shrine or prayer hall with stupa at one end. Made for large gatherings of devotees. Made in rock-cut due to permanency of structure. Chaityas were influenced by ascetic lifestyle of Vedic period and tendency of hermits to retire in solitude. Basic Characteristics Accommodates Stupa. Apsidal Plan. No division between nave and chaitya i.e space for congregational service not clearly defined. Vaulted hall. Colonnades. Side aisles.

Why a Chaitya Hall? : The stupa evolved from being a funerary mound carrying object of worship, had a sacral value. Building needed to accommodate copies of stupa and provide shelter. A structural house for religious activities. Birth of temples with idol worship. Building had almost circular plan and a domed roof.

Chaityas (caves) The next significant development was the rock-cut architecture. Its earliest and most imp. Marvel was the Lomas Rishi Cave, at Barabar hills, Bihar. Derived from timber huts and wooden arch. of Vedic times. They were rectangular halls, with finely polished interior walls. There were a number of well proportioned pillars, generally around 35, and a semi-circular roof. Opposite one entrance stood a stupa. All the pillars have capitals on them, with carvings of a kneeling elephant mounted on bell-shaped bases.

Architecturally, chaityas show similarities to Roman Design concepts of columns and arch. The monks built many structures which were carved out of a single massive rock, done with hammer and chisel, bare hands. The chaityas were almost 40 meters long, 15 meters wide and 15 meters high. Chaityas (caves)

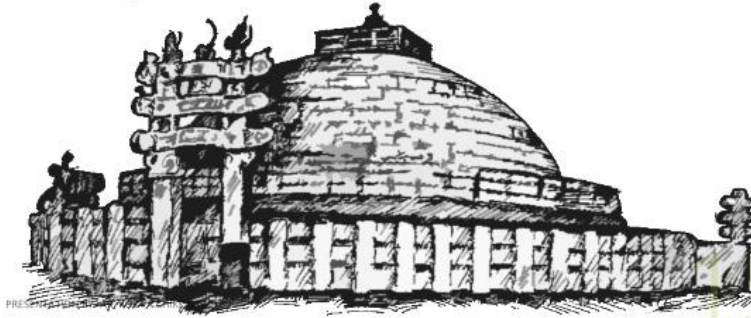
DESIGN: The pillars had three parts: prop, which is the base which is buried into the ground; the shaft, the main body of the pillar which is polished and chiseled; and capital, the head of the pillar where figures of animals are carved. The Stupa at the end of the Chaitya Hall has an umbrella at the top. This Umbrella suggests association with Buddhism. There is a wooden facade, made out of teak wood. The facade makes it look as if the entire structure was resting on the back of an elephant with ivory tusks and metal ornaments.

Architectural Features: Wooden construction inspired from Vedic period imitated in natural rock. Supplemented with wooden surfaces for e.g.. Screens etc. (half timber construction) Shows similarities to Roman concept of column and arch, but no evidence of any relation.

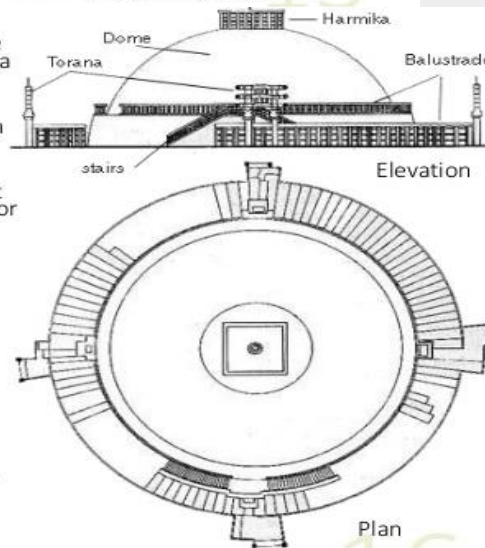
Architectural Features Rectangular halls with finely polished interior walls. Well proportioned pillars with capitals(around 35). Semi circular roof. Pillar had three parts: prop, base buried in ground and shaft. Stupa

at the end. Extensive use of motifs, decorative and symbolic.

- Sanchi Stupa is located 40 km north east of Bhopal, and 10 km from Besnagar and Vidisha in the central part of the state of Madhya Pradesh.
- Sanchi Stupa was built by Ashoka (273-236 B.C.)
- Sanchi Stupa is located on the top of the Sanchi hill, which rises about 100M high above the plain.
- The 'Great Stupa' at Sanchi is the oldest stone structure in India



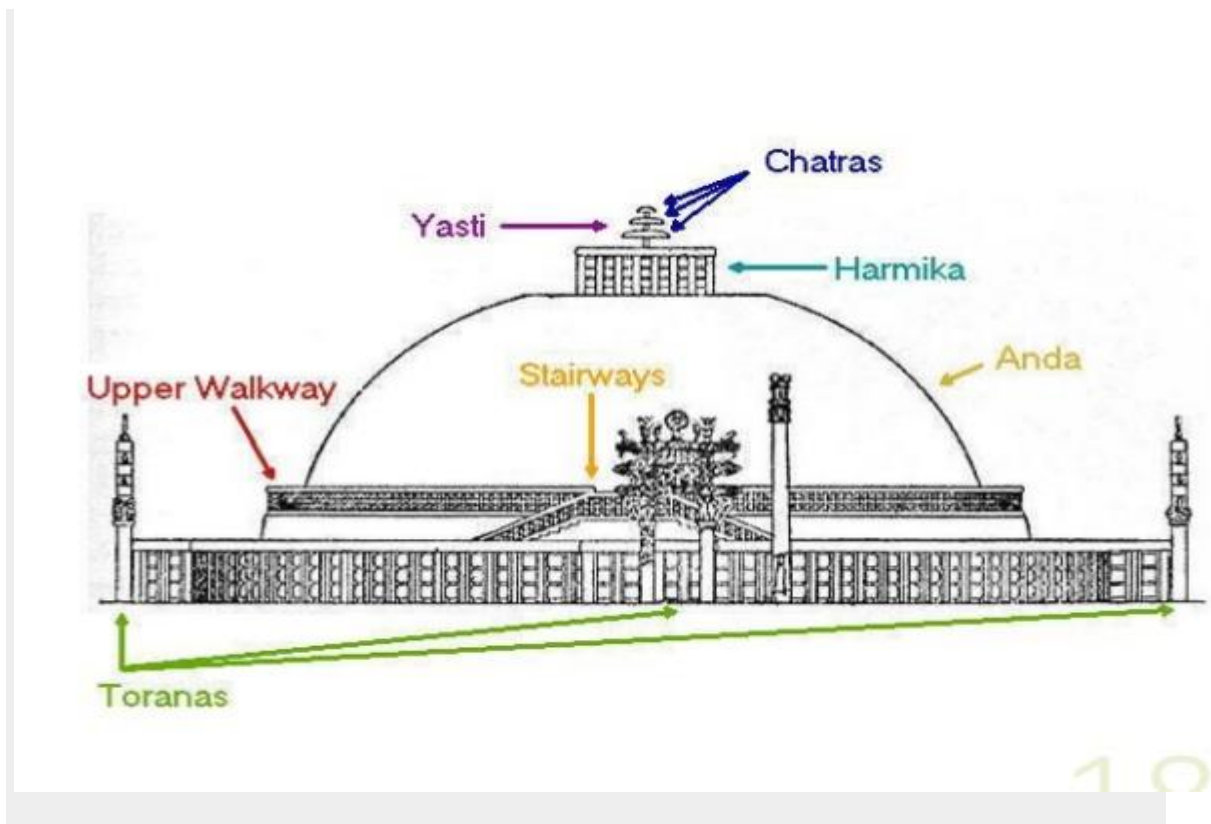
- The spherical dome symbolized the infinite space of the sky. The dome is called as anda or egg.
- The dome is a solid brick work is 36.60M in dia, and 16.46M high.
- A large hemispherical dome which is flat at the top, and crowned by a triple umbrella or Chattra on a pedestal surrounded by a square railing or Harmika.
- A railing enclosed called Vedita which is about 3.35 M high leaving an ambulatory passage or pradikshina path with the gateways.
- The upper ambulatory passage (midhi) 4.87M high from the ground and 1.8M wide.
- There are four gateways known as Toranas at the cardinal points of the campus. Toranas built by ivory or metal worker.



Chaitya Arch : Chaityas normally had a great-horseshoe archway with a wall or screen below. There was sun window in center of the archway for light.

Evolution of Chaitya Hall

VIHARAS A monastery, arrangement of cells for accommodation of monks. Dwellings were simply wooden construction/thatched bamboo huts. Near settlements on trade routes. After first century AD, Viharas came in as educational institutes.



Basic Characteristics Quadrangular court for gathering Surrounded by small cells Front wall incorporated a shrine for image of Buddha Cells had rock cut platforms for beds Viharas were not alike in design Doorways were on sides of the walls of main hall. Construction and Materials Rock-cut architecture basically used wooden construction down to joinery details Hardly structural In brick, corbelled arches are used, and very large bricks to for large span motifs used floral patterns, animals(used throughout the kingdom)

Vihaaras (MONASTRIES) They were the residential places of the Buddhist priest(monks). The main hall was entered through a doorway, leading to an assembly hall, dining chambers and meditation cells. The walls depict figures of the Buddha. The columns were of 60 meters height and well-chiselled. Typical Plan of a Vihaara

WHY WESTERN GHATS •Uniformity of texture in hills. Horizontally stratified. Ends in perpendicular cliffs. BUILDING STRATEGY Cliff was made perpendicular Entry was made A small excavated for architect monk Excavation from top to bottom .Subsequently other cells were build. Ajanta Cave No. 10 100ft by 40ft by 33ft Same roof ribs Two tiered stupa with circular base and elongated dome. Bhaja(150 b.c) Most primitive hall. 55ft by 26ft, side aisles 3.5ft wide and high stilted vault 29ft high with closed rank wood ribs. Facades have numerous mortice holes for fixing elaborate wooden frontages Simple stupa with cylindrical

base and a wooden harmikaa and chhatri. One central doorway+2 side ones. Projection balcony supported on four pillars. H shaped framework held by projection beams.

Ajanta No.9 Entire hall rock carved. Rectangular plan, ceilings of side aisles flat with perpendicular pillars. Doorway in centre and a window on either side, topped by elegant cornice. Lattice windows around archways. No wooden ribs bracing the vaults.

Mahayana Phase- 400 A.D -600 A.D: Basic Characteristics -Main seats of this school were Ajanta, Ellora, Auarnghabad. There was a change in iconography since both schools perceived different imagery of Buddha. Elements of Chaitya Halls remained same. Viharas became finer and more elaborate. Ajanta Cave No. 26 •68ft by 36f by 31 ft. Last Ajanta Hall. More ornamented, right from pillars, elaborate triforium, and recessed panels. Portico had 3 doorways with Chaitya window above. Decline of style by excessive workmanship.

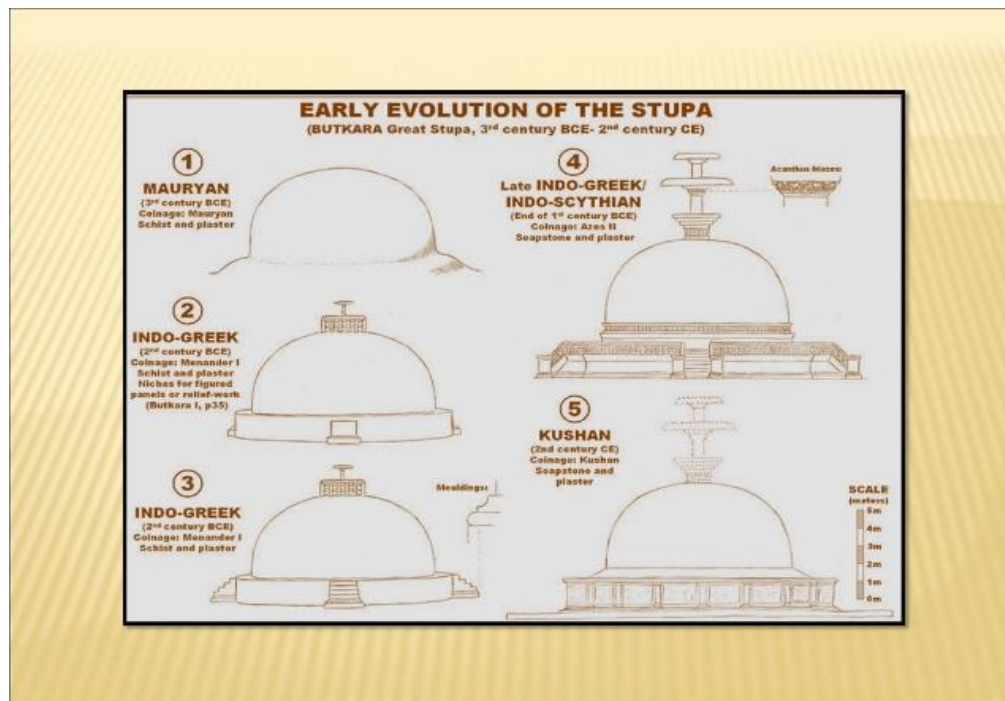
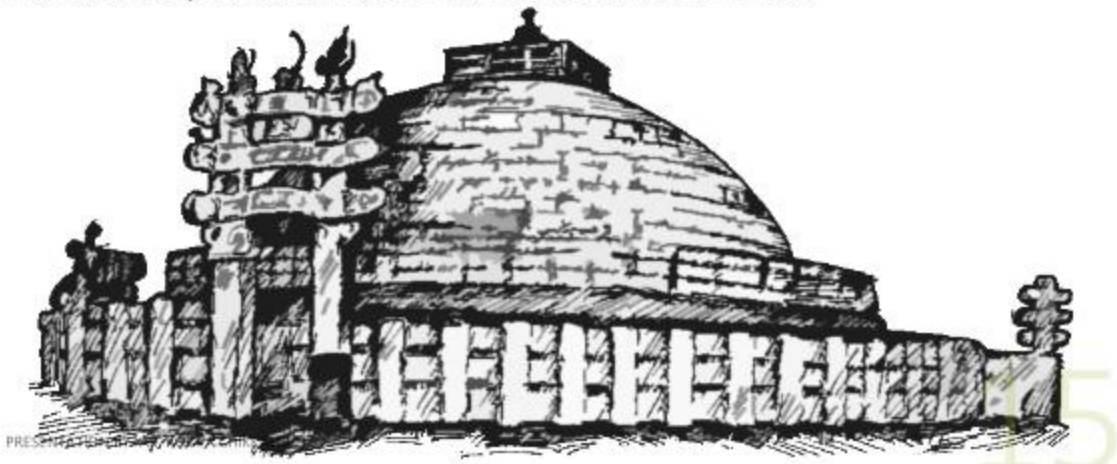
Ellora Caves:Caves excavated out of low ridge hills, Buddhists occupied best site. Dhedwada group(caves 1 to 5) and 6 to 12 were two main groups Mahanwada cave(no.5) had both monastery and hall, it had two parallel platforms for seating of priests Later group had chaitya hall no. 10 Cave no. 2 has 48 pillars colonnade attached with side gallery. Cushion pillar comes in focus now.Caves 66 to 12 -Largest monasteries. No. 12 is knows as tin thaal(thre stories), can lodge 40 priests (108ft by 60 ft). Does not have any ornamentation. Access is through pillared verandah. All three floors are different.

Inspiration and influence.Inspired from Vedic wooden construction techniques, prevalent to Buddhism coming in vogue. Inspired Indian temples, for eg. Early Brahmanical temples in South India (for eg. Chaitya window motif), temples at Sanchi. Even Jain caves got influenced from Buddhism, fro eg. Udaigiri. Spread to North East.Temples Since the same guild of artists worked for all the religions, there is hardly any difference in the treatment of the Buddhist, Brahmanical and Jain temples in a particular region at a given period. The oldest existing temple is temple at Sanchi, which is also the earliest known example of Gupta temple style. The only décor was at the entrance present with bands of scrolls and pillars. This temple lays the logical foundation of temple architecture in North India, which developed in due course a shikhara over its basic form.

The Mahabodhi Temple is a Buddhist temple in Bodh Gaya, marking the location where the Buddha, is said to have attained enlightenment. Bodh Gaya is located about 96km from Patna, Bihar. Next to the temple, on its western side, is the holy Bodhi tree and the monastery there the Bodhimanda Vihara. The tallest tower is 55 metres (180 ft) tall. Holy Bodhi tree Mahabodhi Temple

Sanchi Stupa

- Sanchi Stupa is located 40 km north east of Bhopal, and 10 km from Besnagar and Vidisha in the central part of the state of Madhya Pradesh.
- Sanchi Stupa was built by Ashoka (273-236 B.C.)
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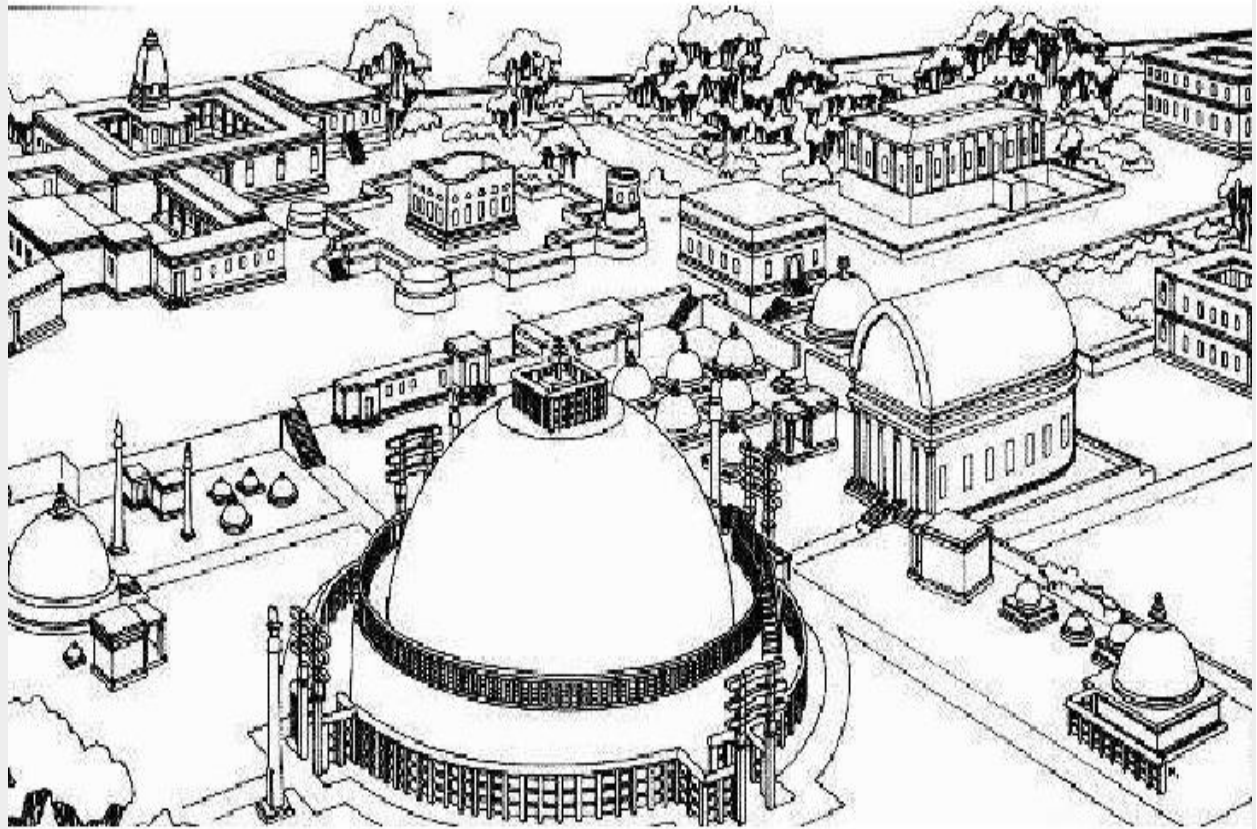


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LOCATION: Stupas were erected over the sacred relics of the monks and worshiped with great reverence. They are therefore known as Relic-Shrines. The stupa more then a funeral mound was planned like a Vedic village.

Great Stupa, Sanchi (Madhya Pradesh)- Dharmaksha stupa

SITE PLANNING



There are four gateways known as Toranas at the cardinal points of the campus. Toranas built by ivory or metal worker. Plan and elevation of Sanchi Stupa. The terrace (midi) 4.87M high from the ground was added thus creating a separate and upper ambulatory passage 1.8M wide. At the base of the dome is a high circular terrace probably meant for parikrama or circumambulation and an encircling balustrade. π a railing enclosed called Vedic which is about 3.35 M high leaving an ambulatory passage or pradikshina path with the

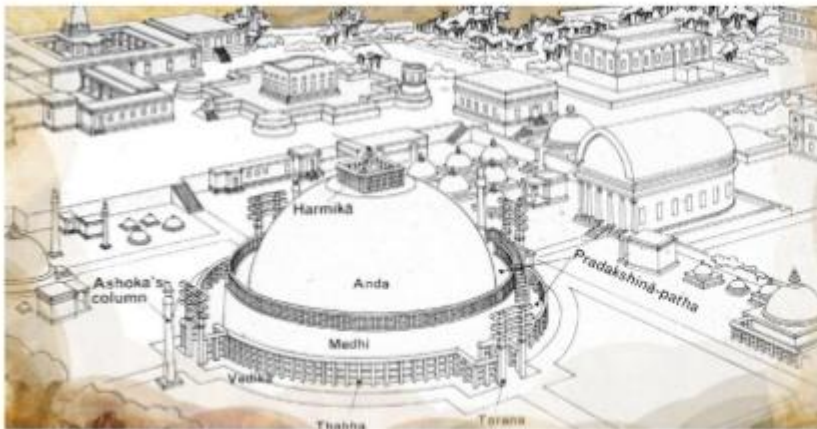
gateways. ☞ a large hemispherical dome which is flat at the top, and crowned by a triple umbrella or Chattra on a pedestal surrounded by a square railing or Harmika. ☞ The dome is a solid brick work is 36.60M in dia, and 16.46M high. The spherical dome symbolized the infinite space of the sky, abode of God. The dome is called as anda or egg or.

The top panels is crowned with Tri-Ratna symbol of the Buddhist trinity, Buddha, the law (dharma) and monastic community (sangha) with wheels of justice in the centre which rest on elephant ☞ The panels have volutes at their terminal ends surmounting with animal sculpture. ☞ These columns support three separate horizontal panels between each of which is row of ornamental balusters. ☞ Torana consist of 2 square upright columns with capitals or lion of elephant heads denoting strength. ☞ The total height of this erection is about 10. 36M with a width of 3M. Ashok chakra The Gateway 'Torona' ☞ shaped pedestal.

FEATURES Harmika or triple umbrella Upper Ambulatory 1.8m wide 3.35m high Stone vedica Ushnisha Urdhava patas 45cm dia 60-90 cm/c Suchi 60 cm dia Lower Ambulatory 3.35 m. high Steps leading to upper ambulatory. Front View of sanchi stupa Column of Torna Front View of Torna Elephants and Yakshi of the Eastern Torana, Great Stupa, Sanchi, mid-1st century BC - AD 1st century View of Torna from upper ambulatory. these niches were mostly provided to erect Buddha's statue. Delicately carved with beautiful floral and geo-metrical patterns. Site Map ☞ a line of sculptured ornaments. run below it ☞ The facing of stone basement has 8 niches, ☞ The Stupa consist of large tower built in stone masonry at the basement for a height of 13M and in brick masonry above for a height 34M. built by Ashoka and later rebuilt in the Gupta period. ☞ situated Benares. 6.5KM to the north of a commemorative Stupa, built in 7th century.

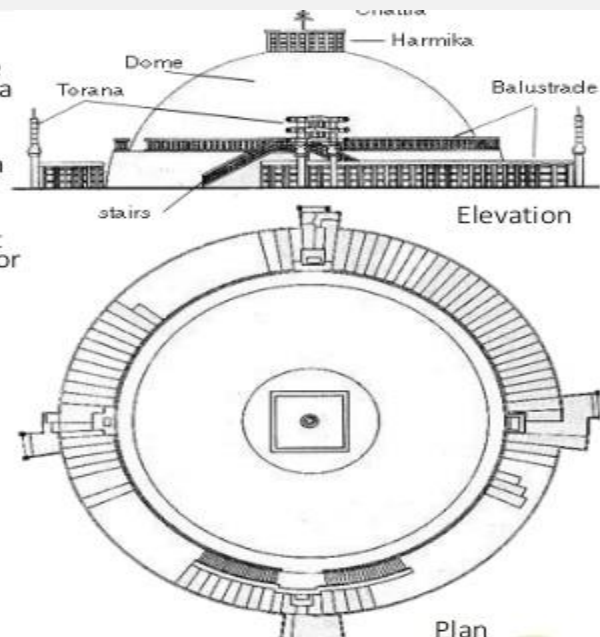
Buddhist architecture in India

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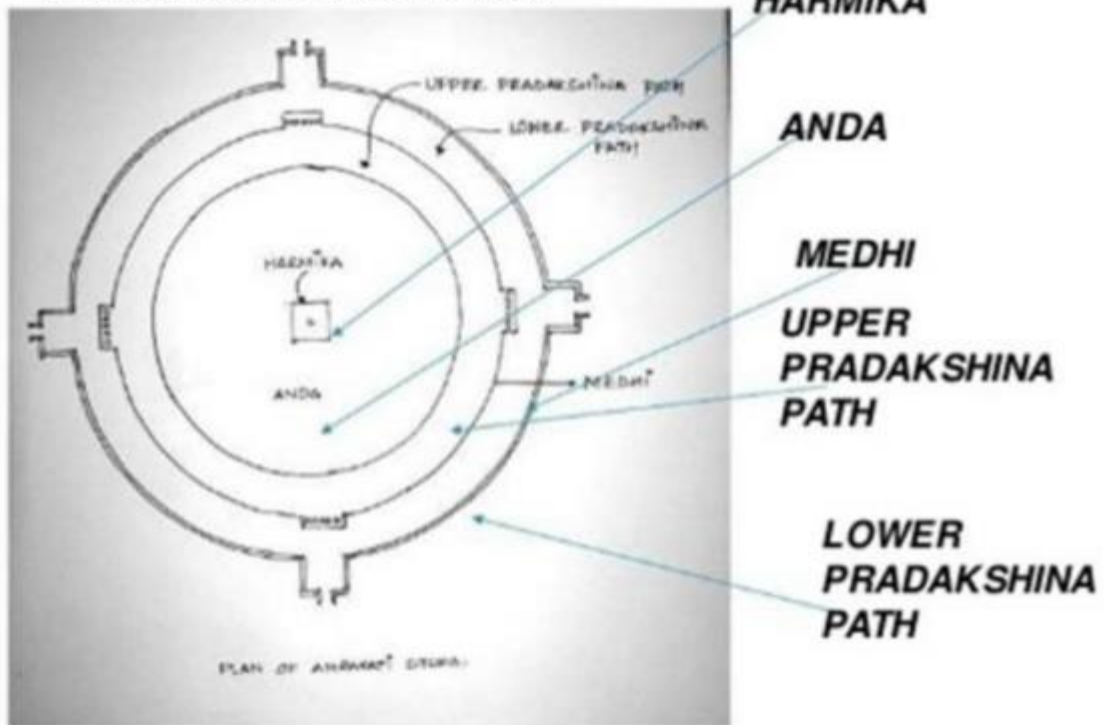


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PLANNING OF SANCHI STUPA



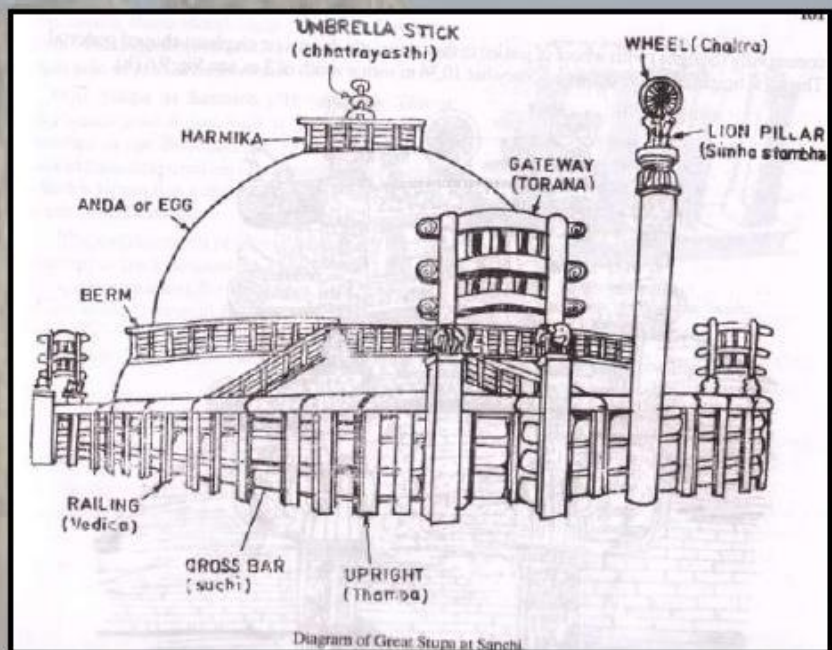
PRESENTATION BY: AR. RODPA CHIKKALGI

17

gateways known as 'TORANAS' at the cardinal points to the compass and are slightly staggered from the railing enclosing stupa.

- The ambulatory or pradakshina path is fenced by railing 3.35m high all around the stupa.

- Outside the railing there once stood the famous ashoka pillar, the fragments of which are noticed now to the right of southern torana



Buddhist Architecture- Stupa

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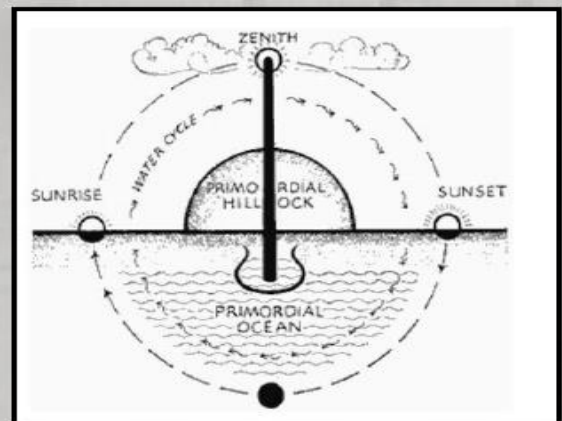
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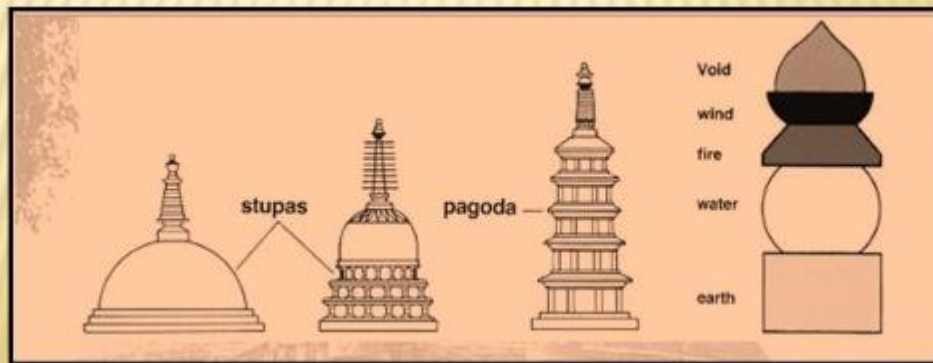
STUPA

- A stupa is a mound-like structure containing buddhist relics, typically the remains of Buddha, used by Buddhists as a place of worship.
- These stupas are the circular tumuli built of earth, covered with stone or brick, the plan, elevation, section and the total form of which were all derived from circle.



Stupa became a cosmic symbol in response to a major human condition: death. With the enlightenment of the Buddha, stupa became a particularly buddhist symbol.

- After many years of teaching Buddha died at the age of 80 .his body was cremated and ashes were divided in to eight parts the ashes were then deposited in several special mound -shaped monuments called Stupas
- Umbrella were often mounted at the top of stupa as a sign of honor and respect
- Also known as thupa ,thope, pagoda ,dagoba



MANDALA AND HINDU TEMPLE ARCHITECTURE

Although there have been various arguments by authors of Indian temple architecture like Stella Kramrisch and Michael W. Meister about the applicability of the Vastu Purusha Mandala as a governing device for temple architecture, it is safe to say that for formulating the layout of the temple, the Vastu Purusha Mandala has been an imperative tool. Though the 8 x 8 grid or the Manduka Vastu Mandala has been used in various temples of Indian architecture, it is to be noted that regional differences have played a major influence on the workability of the mandala design throughout India. Customarily, mandalas were spaces for the symbolic consciousness of universal theories which help in the awakening of the individual psyche. The mandalas can be thought of as diagrams that function as a cue to reach a contemplational state which is the primary aim of the tradition. The form of the temples that are based on the regulating lines of the mandala were meant to create spaces that bring about a “physical and spatial” communion between God and man. ¹

The Vastu Purusha Mandala contains a minimum of nine sections signifying the directions north, south, east, west, northeast, northwest, southeast, southwest and the centre represented as square grids. In the Vastu Purusha Mandala, the Purusha’s head is located in the northeast direction and this is considered utmost sacred. In the southwest are his feet and his knees and elbows in the northwest and southeast. Kept open and clear in the centre part of the diagram are his main organs and his torso. Starting from a single undivided square of 1 x 1 there are grid patterns ranging up to 32 x 32 thus

making it 1024 sections. Architecturally, the adaptation of the Vastu Purusha Mandala has been seen in the design of houses, palaces, temples and even cities. Integrating it into the design brings a certain amount of order in the design. Here, the squares are assumed as cubes of architectural spaces.

The five elements of earth, water, fire, air and space correspond with specific sections of the Vastu Purusha Mandala. The south-west direction is associated with the element of earth(Bhumi); south-east with the elements of fire (Agni); north-east with the element of water (Jala); north-west with the element of air (Vayu) and the centre space with the element of space (Akasha).²



Manduka Mandala - Hindu Temple 64 padas

Indian temples are microcosm of Cosmos, acting as a connecting bridge between physical world and divine world through their proportional arrangement. Mandapa, which were entrance porches in the beginning became an integral part of the temple plan in providing additional functions and in form providing an expression of cosmos especially in elevation. Ashapuri temples analyzed here, corresponds to Nagara temple proportions varying in proportions as they belong to two different styles of nagara Architecture. From the study of Adam Hardy it is said that they possessed temples of different styles in Nagara other than these two. The site of Ashapuri seems to be a place for the development of the Nagara school of architecture.

ANGKOR WAT

Angkor Wat was built by the king of the Khmer Empire first as a Hindu, then a Buddhist temple complex. It is known as one of the largest monuments ever built. Hence, this great Buddhist temple provides clear, physical evidence that Hinduism and Buddhism were brought to the region by the Indians, and adopted by early Southeast Asian empires like the Khmer Empire.

The pagodas of Angkor Wat are also a physical depiction of the Hindu concept of Mandala. In addition, the gates of the temple also resemble the gates of the symbol of Mandala. This concept is Hindu in nature and is believed to have

been brought to pre-modern Southeast Asia from India. It is probable that these ideas were then "borrowed" by the Khmer Empire, and depicted through its great temple.



Angkor Wat also has a Gopura. A Gopura is a monumental tower often built at the entrance of temples - a distinctive feature of South Indian architecture. The presence of this structure at Angkor Wat indicates that there was Indian influence in the architecture of the Khmer Empire.

In addition, the temple has many bas-reliefs depicting stories from the Indian epics, the Mahabharata and Ramayana. This shows that these stories were clearly influential in early Southeast Asia as they repeatedly adorn the walls of Angkor Wat, which was seen as a sacred and important place. This demonstrates just how strong Indian influence was in the Khmer Empire.

Furthermore, even though hundreds of years have passed, Angkor Wat is still a national symbol and major source of pride of Cambodia today. The fact that Indianisation of the Khmer Empire from the 7th to 14th century has continued to shape the heritage and identity of modern Cambodia indicates the lasting impact Indianisation had on the region.

Mandala in Meenakshi temple Madurai with biggest GOPURAMs in the world

Temple Structure

The entire structure, when viewed from above, represents a mandala. A mandala is a structure built according to the laws of symmetry and loci. There are various shrines built within the temple complex.

The temple occupies a huge area in the heart of Madurai as it spreads over 14 acres. The temple is enclosed with huge walls, which were built in response to the invasions. Apart from the two main shrines, which are dedicated to Sundareswarar and Meenakshi, the temple has shrines dedicated to various other deities like Ganesha and Murugan. The temple also houses goddesses Lakshmi, Rukmini, and Saraswati.

The temple also has a consecrated pond named 'Porthamarai Kulam.' The term 'Potramarai Kulam' is a literal translation of 'pond with a golden lotus.' The structure of a golden lotus is placed at the center of the pond. It is said

that Lord Shiva blessed this pond and declared that no marine life would grow in it. In the Tamil folklore, the pond is believed to be an evaluator for reviewing the worth of any new literature.



Image Credit:

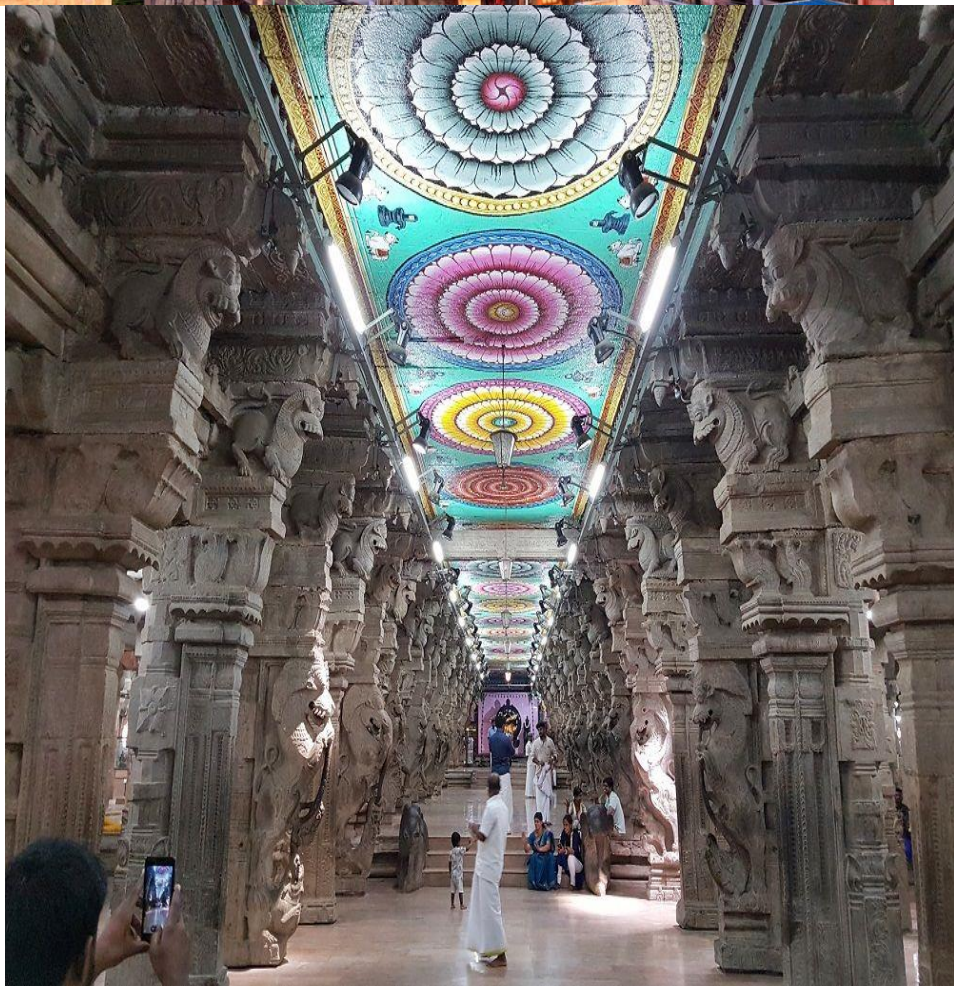
The temple has four main towering gateways (gopurams) that look identical to each other. Apart from the four ‘gopurams,’ the temple also houses many other ‘gopurams’ that serve as gateways to a number of shrines. The temple has a total of 14 towering gateways. Each one of them is a multi-storey structure and displays thousands of mythological stories and several other sculptures. The major ‘gopurams’ of the temple are listed below:

- **Kadaka Gopuram** – This towering gateway leads to the main shrine that houses Goddess Meenakshi. The gateway was rebuilt by Tumpichi Nayakkar during the mid-16th century. The ‘gopuram’ has five storeys.
- **Sundaeswarar Shrine Gopuram** – This is the oldest ‘gopuram’ of the temple and was built by Kulasekara Pandya. The ‘gopuram’ serves as a gateway to the Sundaeswarar (Lord Shiva) shrine.
- **Chitra Gopuram** – Built by Maravarman Sundara Pandyan II, the gopuram depicts the religious and secular essence of Hinduism.
- **Nadukkattu Gopuram** – Also called as the ‘Idaikattu Gopuram,’ this gateway leads to the Ganesha shrine. The gateway is placed right in between the two main shrines.
- **Mottai Gopuram** – This ‘gopuram’ has fewer stucco images when compared to the other gateways. Interestingly, ‘Mottai gopuram’ had no roof for nearly three centuries.
- **Nayaka Gopuram** – This ‘gopuram’ was built by Visvappa Nayakkar around 1530. The ‘gopuram’ is astonishingly similar to another gateway called ‘Palahai Gopuram.’

The temple also has numerous pillared halls called 'Mandapams.' These halls were built by various kings and emperors and they serve as resting places for pilgrims and devotees. Some of the most important 'mandapams' are given below:

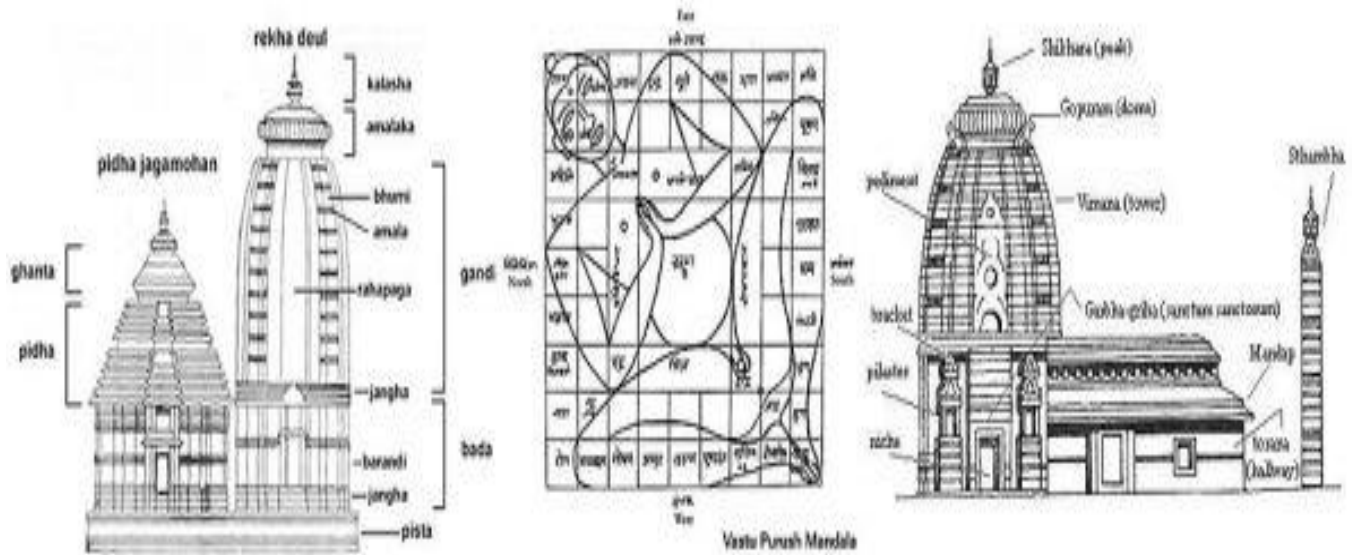
- **Ayirakkal Mandapam** – It literally translates to 'hall with thousand pillars.' The hall, which was built by Ariyanatha Mudaliar, is a true spectacle as it is supported by 985 pillars. Each and every pillar is sculpted magnificently and has images of Yali, a mythological creature.
- **Kilikoondu Mandapam** – This 'mandapam' was originally built to house hundreds of parrots. The parrots that were kept there in cages were trained to say 'Meenakshi'. The hall, which is next to the Meenakshi shrine, has sculptures of characters from Mahabharata.
- **Ashta Shakthi Mandapam** – This hall houses the sculptures of eight goddesses. Built by two queens, the hall is placed in between the main 'gopuram' and the gateway that leads to the Meenakshi shrine.
- **Nayaka Mandapam** – 'Nayaka Mandapam' was built by Chinnappa Nayakkar. The hall is supported by 100 pillars and houses a Nataraja statue.





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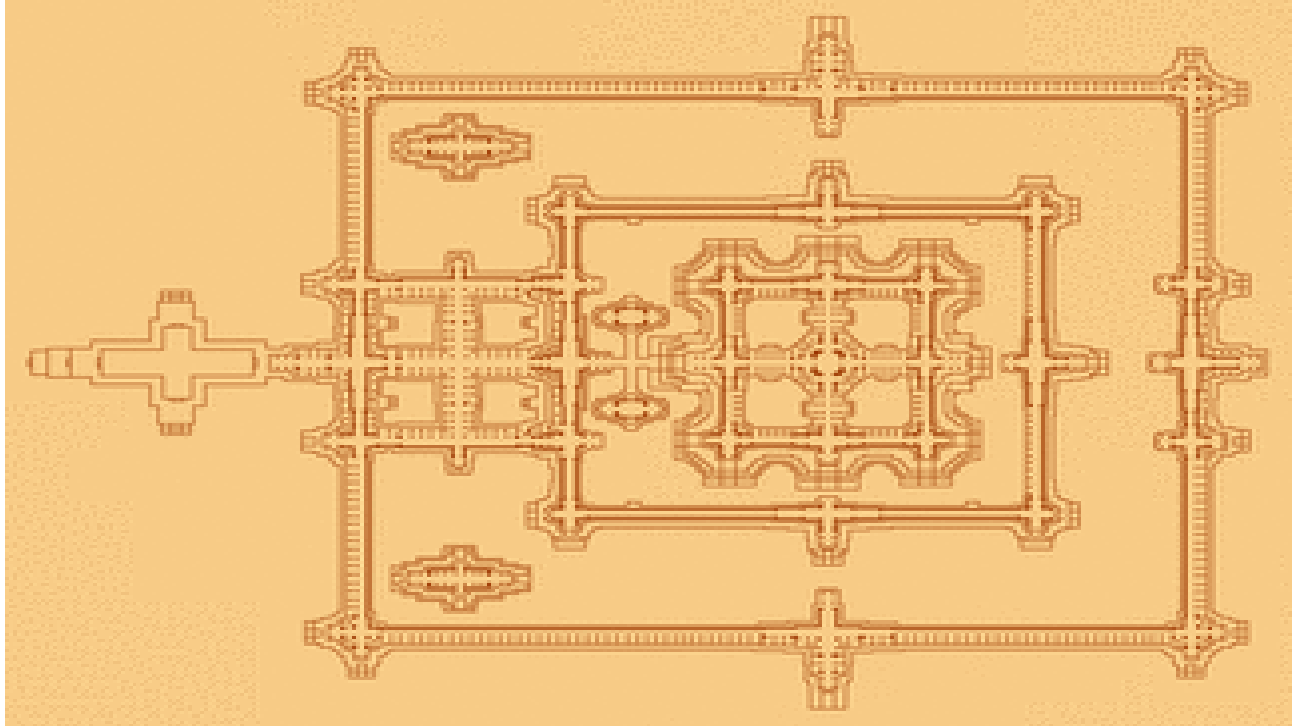
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Note how the architectural layout of the temple greatly resembles the symbol of Mandala. For example, you can spot the building's centre point, as well as the four gates on the outermost wall.



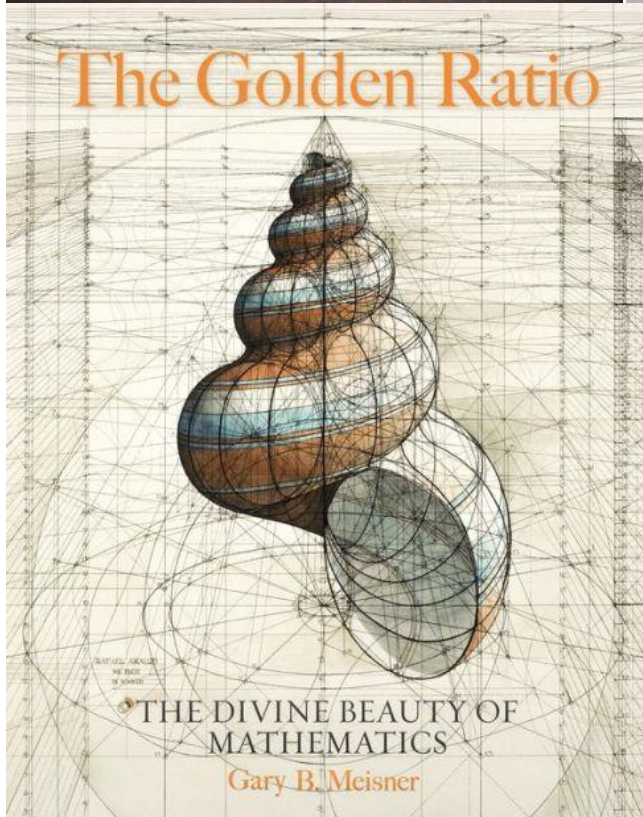
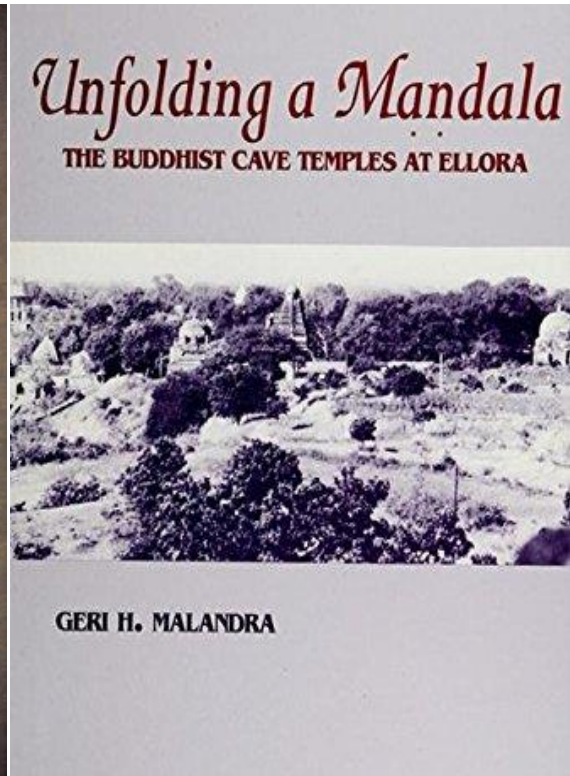
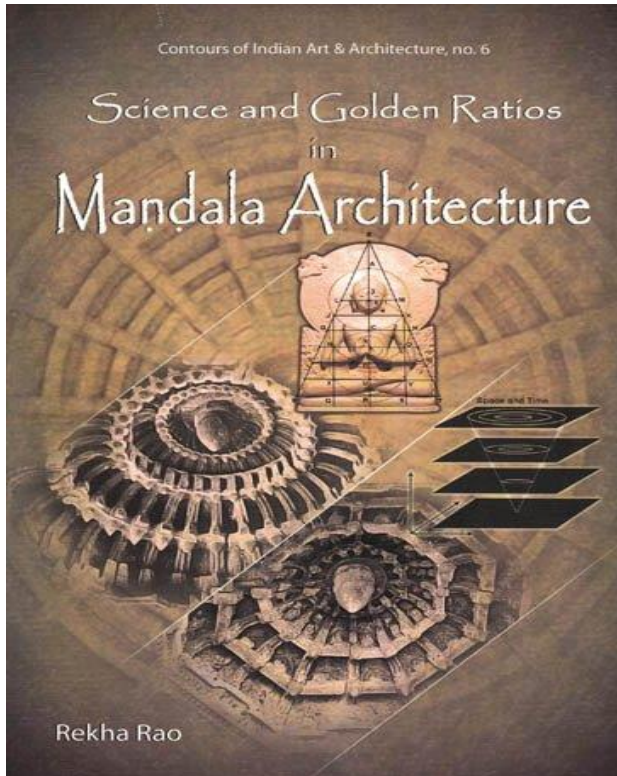
Rough Layout of Angkor Wat

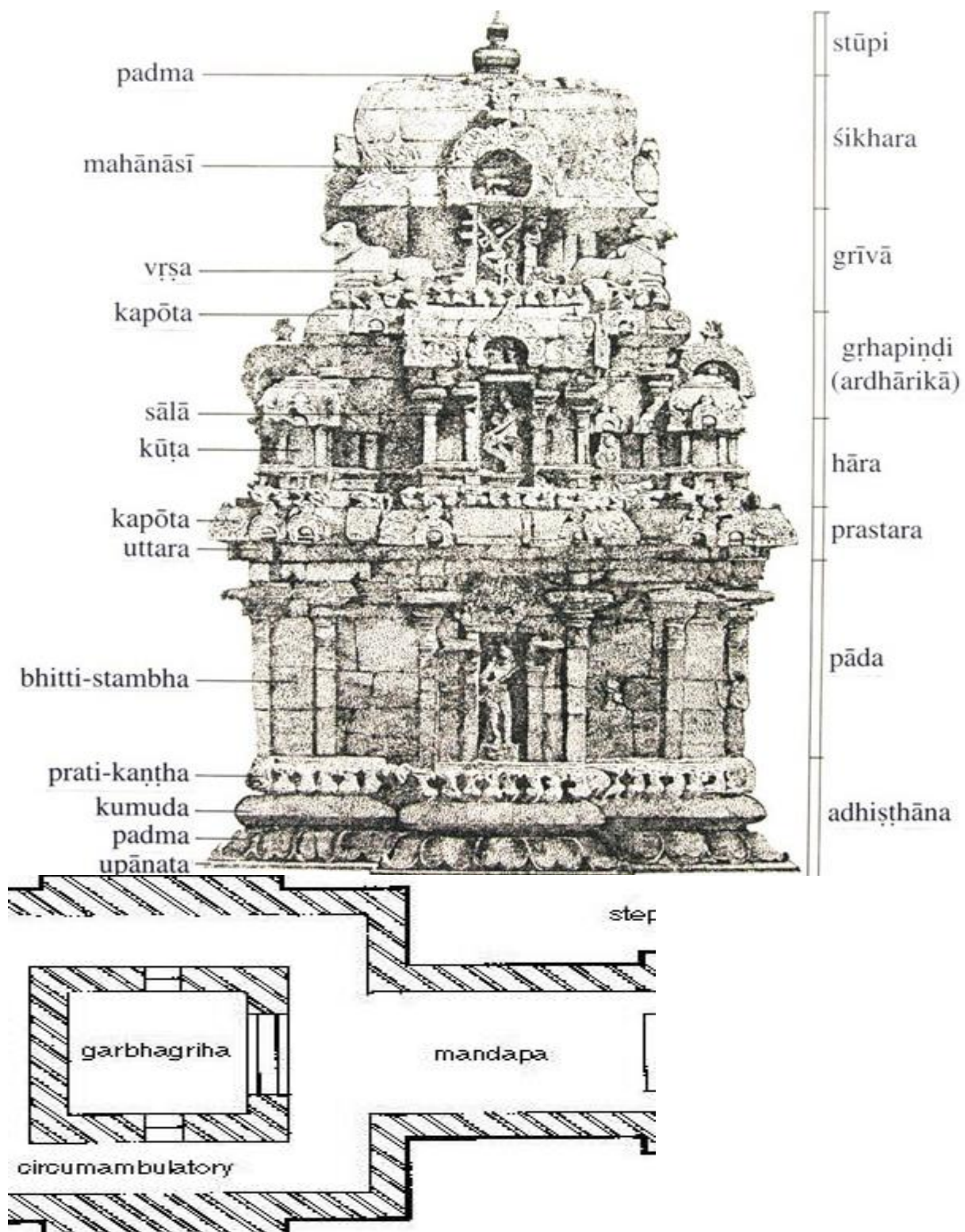






វិថីត្រសាស ប្រើណូលេរី អង្គរ២០១១





“The Vastu Purusha Mandala represents the manifest form of the Cosmic Being; upon which the temple is built and in whom the temple rests. The temple is situated in Him, comes from Him, and is a manifestation of Him.

The Vastu Purusha Mandala is both the body of the Cosmic Being and a bodily device by which those who have the requisite knowledge attain the best results in temple building.” – Stella Kramrisch ; The Hindu Temple, Vol. I

Vastu Purush Mandala has been in existence for thousands of years, will continue till eternity. It is the fundamental principle which continues to create and run the whole universe - both at the macro and the micro level If we can decode it's secret and follow its eternal principles for construction, we can ensure a life full of health, wealth, peace and prosperity.

The Vastu Purush Mandala is a cosmic geometrical wonder used to design temples amongst other structures. When we observe the energy fields that develop at different stages of a building – starting from the stage of a vacant plot - to the digging of land - to the laying of the foundation - to the completion of the building - and finally to the point when it is inhabited by the people – we unravel the secrets of the Vastu Purusha Mandala.

Image of the Universe: The Vastu Mandala is the omnipresent, omnipotent soul of every building. It is based on the principle that Man and Universe are analogous in their structure and spirit. Vastu Purush Mandala is thus a Yantra or an image of the Universe .Hindus believe that the body is the image of the entire Universe(See figure below). Vastu Purusha Mandala is a combination of 45 Devtas and Asuras present in a geometrical figure. The Devtas represent our consciousness and the Asuras our ignorance and fear. The war between consciousness and ignorance goes on each moment within all of us. It is not just a Puranic story, it's the reality we live in each moment.

DECODING THE DEVTAS & ASURAS The 45 Energy Fields PDAVINAYASA ModularGrid After Shilanyas and construction of foundation walls, this is the first energy field to develop in the plot.

BRAHMA DEVTASvsASURAS THE ETERNAL WAR- Energy Fields Next to Brahma ARYAMA The Power of Connections VIVASWAN The Power of Revolution or Change MITRA The Power of Inspiration & Action BHUDHAR The Power of Manifestation DEVA VITHI

The 8 Energy Fields in the Diagonal Directions NORTH EAST Apaha Apahavatsa SOUTH WEST Indra Indrajaya SOUTH EAST Savita Savitur NORTH WEST Rudra Rajyakshma MANUSHYA VITHI

1. NORTH EAST APAHA Igenerates the energies responsible for healing APAHAVATSA Carries the healing powers to the occupants
www.anantvastu.com

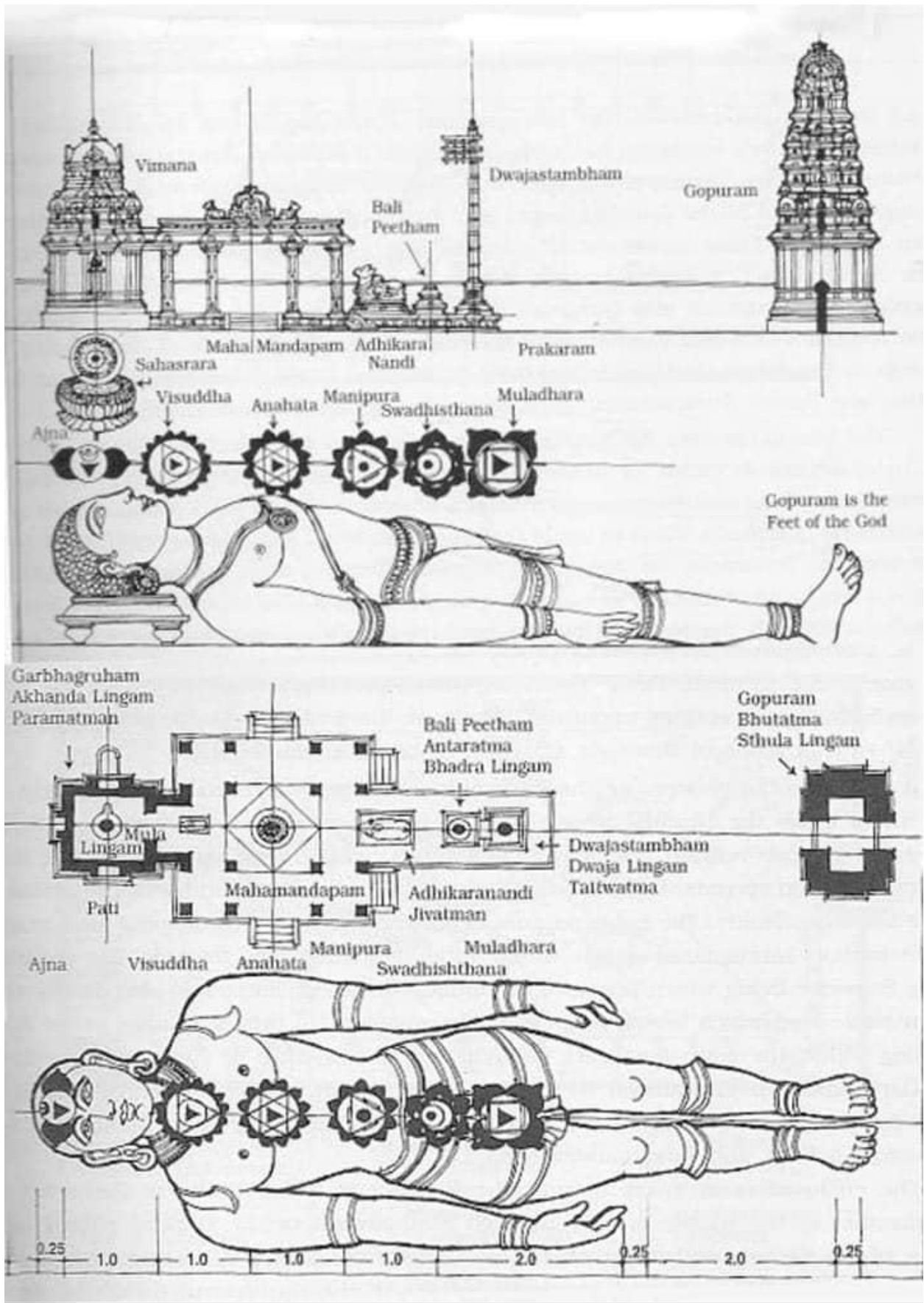
2. SOUTH EAST SAVITA Energies that help to initiate any process or action SAVITUR Energies that give capabilities to continue those actions and overcome all challenges
3. . SOUTH WEST INDRA Energies that establish stability and enhance growth INDRAJAYA The tools and the channels through which one can achieve growth
4. .NORTH WEST RUDRA Energies responsible for support and ensure flow of activities and life RAJYAKSHMA Energies which uphold the support and stabilise the mind . The 32 Energy Fields of the Outer Periphery PAISHACHA VITHI . These are also the 32 Possible Entrance Locations . The 32 Energy Fields of the Outer Periphery ADITI Mother of the Devas, this energy field provides security and helps one connect with himself/herself) DITI Mother of the Asuras, this energy field gives the powers of a wider vision and to see the actual truth of life.SHIKHI Symbolic of a pointed flame, this field gives the power of ideas and the ability to project one's thoughts to the world PARJANYA The giver of rains, this field has the powers to bless the occupants with fertility and fulfilment of all their wishes NORTH EAST
5. SOUTH EAST BHRISHA The power of friction needed to initiate any action , thinking or activity AAKASH The energy that provides the space for manifestation ANILA The energy of air or vayu, it helps to uplift the fire or push further the actions initiated PUSHAN The energy of nourishment, it blocks the path of enemies The 32 Energy Fields of the Outer Periphery.
6. SOUTH WEST BHRINGRAJ The energy which extracts nutrients from the food and removes the waste MRIGHA The energy that drives curiosity and imparts skills PITRA The energy of the ancestors which provides all means of safety and happiness required for existence DAUWARIK The safe keeper, represents lord Nandi-the trusted vehicle of lord Shiva. The energy of being genius and highly knowledgeable The 32 Energy Fields of the Outer Peripher
7. NORTH WEST SHOSHA The power of detoxification from negative emotions PAPYAKSHMA The energy which gives addiction, diseases and the feeling of guilt ROGA The energy which provides support in the hour of need NAGA The energy which gives emotional enjoyments and cravings The 32 Energy Fields of the Outer Periphery
8. NORTH MUKHYA The chief architect or lord Vishwakarma, this energy field defines the main purpose of the building & also helps in their manifestation BHALLAT The energy field which grants colossal abundance, it magnifies the efforts and their results SOMA The energy

field of Kubera - the lord of all wealth and money. It ensures a smooth flow of money and opportunities BHUJAG The the lord of hidden treasures, this energy field is the preserver of medicines. It safeguards the health of the occupants The 32 Energy Fields of the Outer Periphery

9. EAST JAYANT The energy which gives the sense of being victorious, it refreshes the mind and body MAHENDRA The energy which grants the power of administration and connectivity SURYA The core controller, this energy fields imparts health , fame and farsightedness SATYA The energy which establishes goodwill, status, authenticity and credibility The 32 Energy Fields of the Outer Periphery
10. SOUTH VITATHA The energy field of falsehood, pretension and the unreal GRUHAKSHAT The power which binds the mind and defines its limits YAMA The power of expansion, this energy field binds the world in laws GANDHARVA The energy of preservation of health & vitality. This energy also governs all kinds of arts and music The 32 Energy Fields of the Outer Periphery
11. WEST SUGREEV The power which grants the ability to receive all knowledge PUSHPADANT The power which grants blessings and fulfills all desires VARUN The lord of the seas, this energy field observes and runs the whole world. It is the granter of immortality ASURA The the energy field that releases the mind from temptations and gives depth in spirituality The 32 Energy Fields of the Outer Periphery.

REFERENCES

1. Bindu and Mandala: Manifestations of Sacred Architecture,Conference: ICABE-2016
Kuala Lumpur Malaysia. Paper presented by Jaffer Adam,Deepika Varadarajan.
2. THE MANDALA AS A COSMIC MODEL USED TO SYSTEMATICALLY STRUCTURE THE TIBETAN BUDDHIST LANDSCAPE,Ping Xu,***Journal of Architectural and Planning Research***,Vol. 27, No. 3 (Autumn, 2010), pp. 181-203,Published by: Locke Science Publishing Co.
3. On the Idea of the Mandala as a Governing Device in Indian Architectural Tradition,Sonit Bafna,***Journal of the Society of Architectural Historians***,Vol. 59, No. 1 (Mar., 2000), pp. 26-49,Published by: University of California Press on behalf of the Society of Architectural Historians,<https://www.jstor.org/stable/991561>



CHAPTER X

The Temple Mountain of Baphuon



SHORT VERSION

In many ancient religions, mountain tops—from the Greeks' Mt. Olympus to the highest Himalayas of Hindu mythology were believed to be the privileged home of the gods. Southeast Asia, largely dependent on India for its principal religions of Hinduism and Buddhism, is no exception. On the island of Java in Indonesia, for example, the ancient holy site of Dieng was established in the crater of an extinct volcano. Its name in old Javanese, Di Hyang (in Sanskrit, Devalaya), means, in effect, “home of the Gods.” According to Thierry Zephir, Khmer architecture, of which the temple-mountain is at once the best-known and most important expression, remains one of Asia's major contributions to the world's cultural patrimony. Despite the considerable number of studies, both general and specific, devoted to it, it is far from having been completely explained. It still constitutes a field of exploration and research as rich as the religious traditions that gave rise to it.¹

In Cambodia, in the classic Khmer architecture of the Angkorean period, we find a temple type in which the sanctuary is built atop a stepped pyramid. Nineteenth century archaeologists called these “temple-mountains.” Each important sovereign was apparently obliged to build one in order to establish his power. Baphuon is one such temple at Angkor, Cambodia. It is located in Angkor Thom, northwest of the Bayon.



Built in the mid-11th century, it is a three-tiered temple mountain built as the state temple of Udayadityavarman II dedicated to the Hindu God Shiva. It is the archetype of the Baphuon style with intricate carvings covering every available surface. The temple adjoins the southern enclosure of the royal palace and measures 120 metres east-west by 100 metres north-south at its base and stands 34 meters tall without its tower, which would have made it roughly 50 meters tall. Its appearance apparently impressed Temür Khan's late 13th century envoy Zhou Daguan during his visit from 1296 to 1297, who said it was 'the Tower of Bronze...a truly astonishing spectacle, with more than ten chambers at its base.

1. Zephir, .Thierry" The Angkorean Temple-Mountain" *Expedition Magazine* 37.3 (1995): n. pag. *Expedition Magazine*. Penn Museum, 1995 Web. 18 Sep 2021 <<http://www.penn.museum/sites/expedition/?p=4853>>

This symbolism of temple-mountains is unique to Khmer Architecture inspired perhaps to the presence of Mount Kulen the holiest mountain to the Khmer People blended with the Hindu Concept of Mount Meru the celestial center of the Universe and the home of Lord Vishnu, the Hindu diety they revealed. The oldest temple-mountain available for study is the Bakong (founded A.D. 881). Within its first enclosure is a series of five rectangular buildings of which four are symmetrically distributed north and south of the monument's principal east-west axis. These buildings are normally called long rooms. Although not found at Phnom periphery of the first levels of the pyramids of the Eastern Mebon (A.D. 952) and Pre Rup (A.D. 961). At the unfinished temple of Ta Keo (end of the 10th, beginning of the 11th century and our Baphuon.

The Temple Mountain of ANGKOR WAT

The temple mountain form was meant to represent Mount Meru. The five towers are arrayed in quincunx form; four at the corners and one in the center.

Angkor Wat is a Hindu temple complex at Angkor, Cambodia, built for the king Suryavarman II in the early 12th century as his state temple and part of his capital city. (The Angkorian period dates 802-1432). As the best-preserved temple at the site, it is the only one to have remained a significant religious centre since its foundation—first Hindu, dedicated to the god Vishnu, then Buddhist. Angkor Wat combines two basic plans of Khmer temple architecture: the temple mountain and the later galleried temple, based on early South Indian Hindu architecture. It is designed to represent Mount Meru, home of the devas in Hindu mythology: within a moat and an outer wall 3.6 kilometres (2.2 mi) long are three rectangular galleries, each raised above the next. At the centre of the temple stands a quincunx of towers. Unlike most Angkorian temples, Angkor Wat is oriented to the west. A UNESCO World Heritage Site.



Angkor Wat is said to be the largest religious monument in the world. Its name, which translates to “temple city” in the Khmer language of the region, references the fact it was built by Emperor Suryavarman II, who ruled the region from 1113

to 1150, as the state temple and political center of his empire. In 1840s “ re-discovered” by the French explorer Henri Mouhot, It impressed him so much that he wrote that the site was “grander than anything left to us by Greece or Rome.”

The compliment can likely be attributed to the temple’s design, which is supposed to represent Mount Meru, the home of the gods, according to tenets of both the Hindu and Buddhist faiths. Its five towers are intended to recreate the five peaks of Mount Meru, while the walls and moat below honor the surrounding mountain ranges and the sea.

In his article- Mountains and Cities in Cambodia: Temple Architecture and Divine Vision, Michael Meister exclaims the similarity of modern American cities with that of ancient Khmer ones such as the Angkor Wat, towering towers.¹

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1. Meister, M. W. (2000). Mountains and Cities in Cambodia: Temple Architecture and Divine Vision. *International Journal of Hindu Studies*, 4(3), 261–268. <http://www.jstor.org/stable/20106740>

Udayadityavarman II ruled the Angkor Kingdom from 1050 to 1066 A.D. He was the successor of Suryavarman I but not his son; he descended from Yasovarman I's spouse. He built the Baphuon Temple to honor the god Shiva, but some of the sculptures are dedicated to Buddha. He also completed the construction of the West Baray reservoir and built the West Mebon, a raised-earth island in the center. During his reign, several attempted rebellions, in 1051 and 1065, were crushed by his general Sangrama.

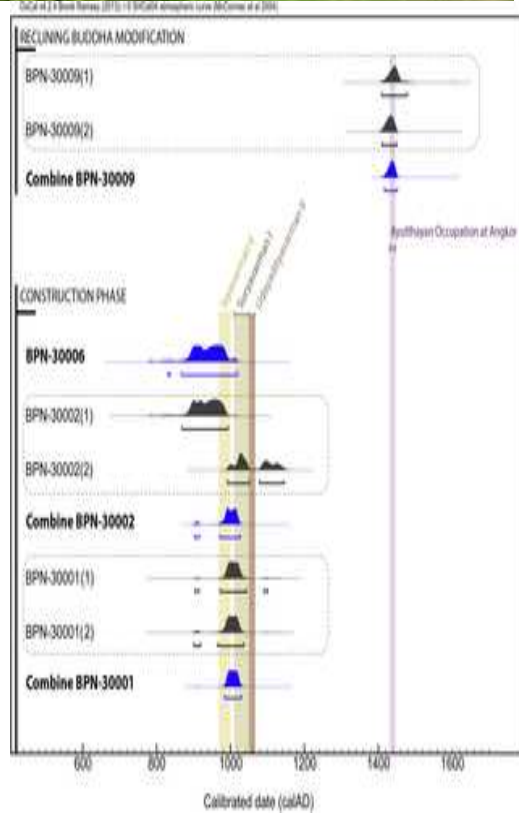
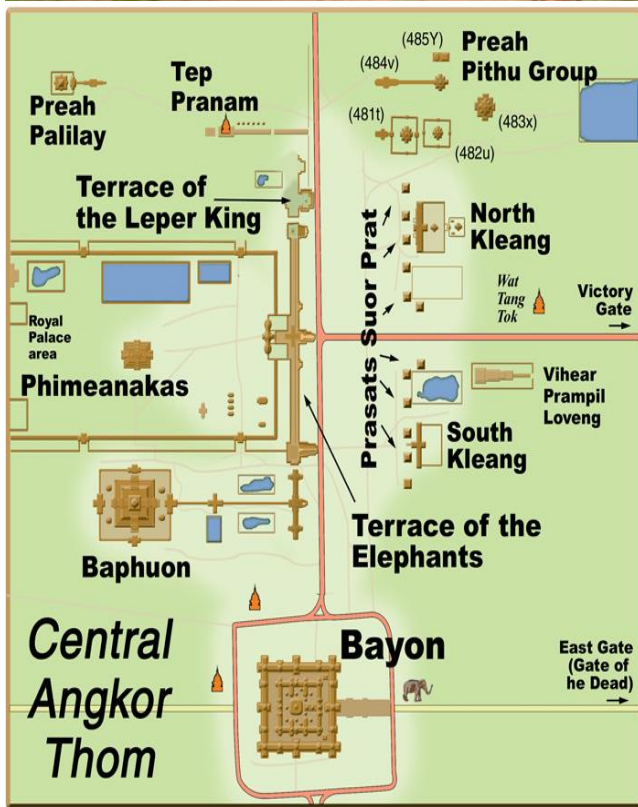
The Angkorian architects and sculptors created temples that mapped the cosmic world in stone. Khmer decorations drew inspiration from religion, and mythical creatures from Hinduism and Buddhism were carved on walls. Temples were built in accordance to the rule of ancient Khmer architecture that dictated that a basic temple layout include a central shrine, a courtyard, an enclosing wall, and a moat. Khmer motifs use many creatures from Buddhist and Hindu mythology, like the Royal Palace in Phnom Penh, use motifs such as the garuda, a mythical bird in Hinduism.

The architecture of Cambodia developed in stages under the Khmer empire from the 9th to the 15th century, preserved in many buildings of the Angkor temple. The remains of secular architecture from this time are rare, as only religious buildings were made of stone. The architecture of the Angkor period used specific structural features and styles, which are one of the main methods used to date the temples, along with inscriptions.



The Sdok Kak Thom temple, located near the present day Thai town of Aranyaprathet, was also constructed during his reign. The temple is perhaps most famous as the discovery site of a detailed inscription recounting the sequence of previous Khmer kings. The inscription stele is now part of the collection of the national museum in Bangkok. He was succeeded by his younger brother Harshavarman III.





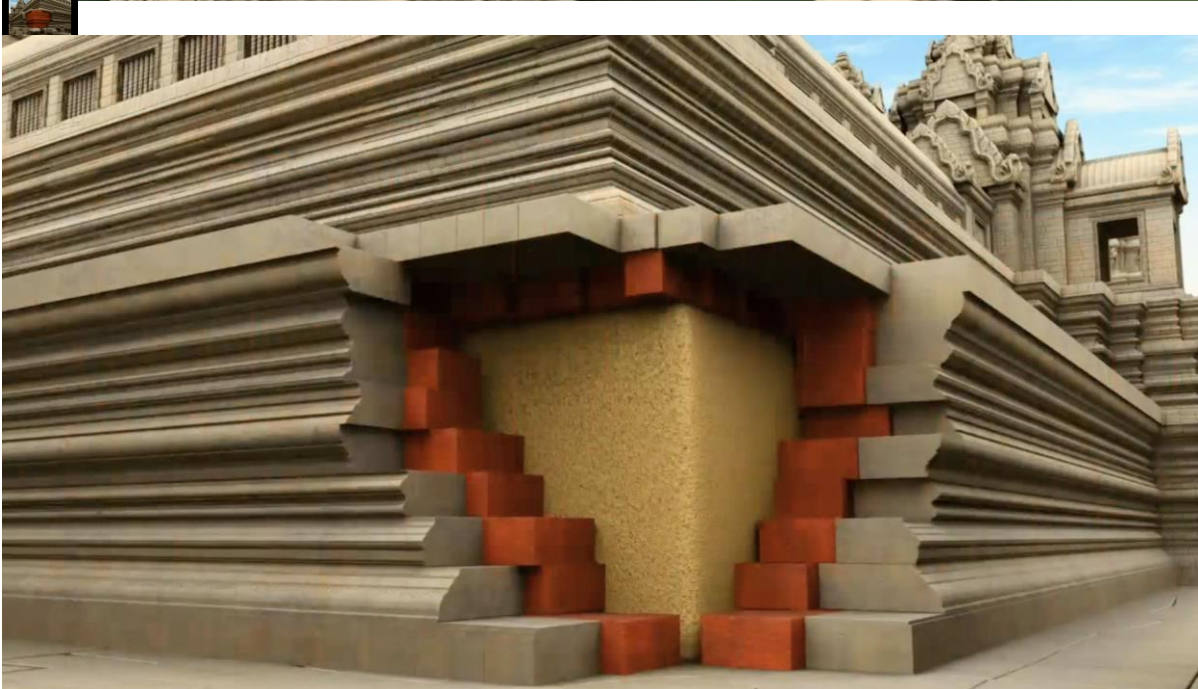
The Construction of the Baphuon was part of a major dynastic change and florescence of the Hindu-Mahayana Buddhist state and the modification is the key

evidence of Theravada Buddhist power after Angkor's decline in the 15th century. Using a newly-developed approach based on AMS radiocarbon dating to directly date four iron crampons integrated into the structure, the first direct evidence was produced for the history of the Baphuon. Both construction and modification were a major temple associated with the imperial reformations and territorial consolidation of Suryavarman I (1010–1050 AD) for whom no previous building to legitimize his reign could be identified. The Theravada Buddhist modifications are a hundred years earlier associated with the Ayutthayan occupation of Angkor in the 1430s and 40s .¹

1 L

eroy S, Hendrickson M, Delqué-Kolic E, Vega E, Dillmann P (2015) First Direct Dating for the Construction and Modification of the Baphuon Temple Mountain in Angkor, Cambodia. PLoS ONE 10(11): e0141052. <https://doi.org/10.1371/journal.pone.0141052>



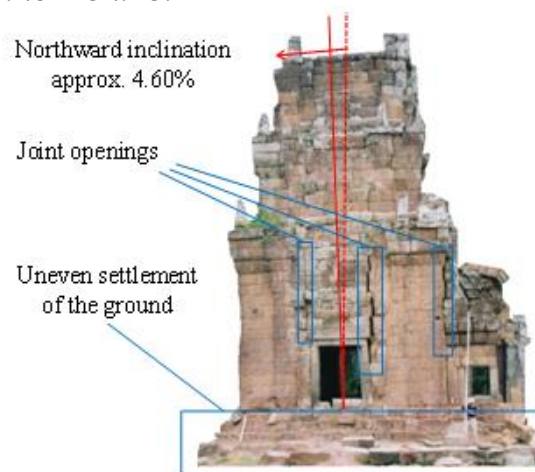
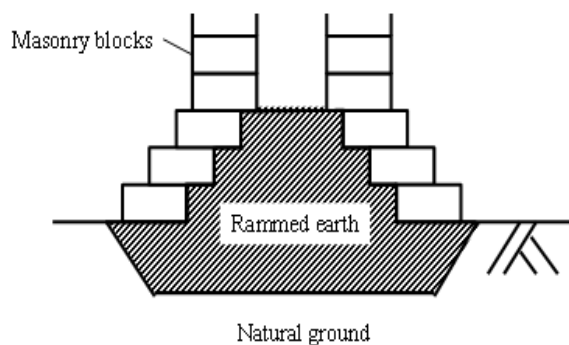


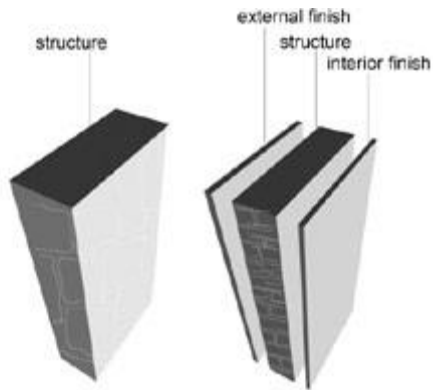


In the late 15th century, the Baphuon was converted to a Buddhist temple which explains the presence of the Buddha images- probably added later on.

The foundation of the Angkor monuments is artificial soil embankment, so-called “rammed earth”, and its compaction quality affects significantly on the stability of the buildings.¹

1. Ryota Hashimoto, Tomofumi Koyama, Mamoru Kikumoto, Toru Saito, Mamoru Mimura, *Stability Analysis of Masonry Structure in Angkor Ruin Considering the Construction Quality of the Foundation*, *Journal of Civil Engineering Research*, Vol. 4 No. 3A, 2014, pp. 78-82. doi: 10.5923/c.jce.201402.13.





fixed performance capability limited performance flexibility ***The walls of the Baphuon are double walls***

TODAY a double wall (also called component wall) is made of two concrete slabs with a thickness of 5–7 cm each that are held together with truss-type reinforcement. In these concrete panels, the structural reinforcement for the entire concrete wall is built into the precast concrete component.

After the installation of the double walls, the remaining void is filled with mix-in-situ concrete; therefore, this double wall is a semi-precast part. This produces a monolithic, dense and extremely solid concrete wall. The double walls thus combine the major advantages of prefabrication with the advantages of a wall that has been produced on site with concrete poured into casing. Double walls are used for the walls in basements and each storey.

Often, double walls are produced with core insulation (with insulation inside them) so as to be able to guarantee compliance with regulations concerning thermal insulation. For structural calculations, a double wall is treated on the basis of its full thickness in exactly the same way as a wall that has been produced by concrete poured into casing.



The temple itself was surrounded by a wall 125 by 425 m the central tower was probably gilded wood, which has not survived.

However by the 20th century, much of the temple had largely collapsed, and restoration efforts took on an epic quality. A large-scale project to dismantle the temple so that its core could be re-enforced before the whole is re-constructed again—a process known as anastylosis—was abandoned after civil war broke out in 1970. The workers and archaeologists were forced to leave 300,000 carefully labelled and numbered blocks organized across 10 hectares surrounding the temple. However, the plans identifying the pieces were lost during the decade of conflict and the Khmer Rouge that followed.

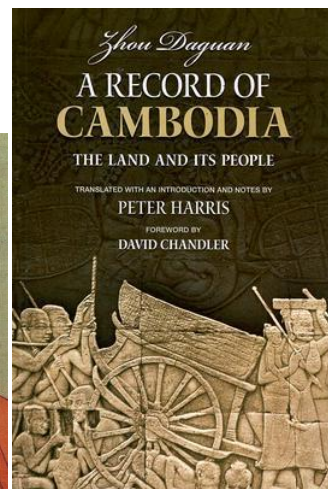
A second project to restore the temple was launched in 1996 under the guidance of architect Pascal Royère from the EFEO. It took the team another 16 years to complete what had become known as the "largest 3D jigsaw puzzle in the world". In April 2011, after 51 years of work, the restoration was completed and the temple formally re-opened. King Norodom Sihamoni of Cambodia and Prime Minister Francois Fillon of France were among those who first toured the renovated temple during the inauguration ceremony on July 3, 2011.





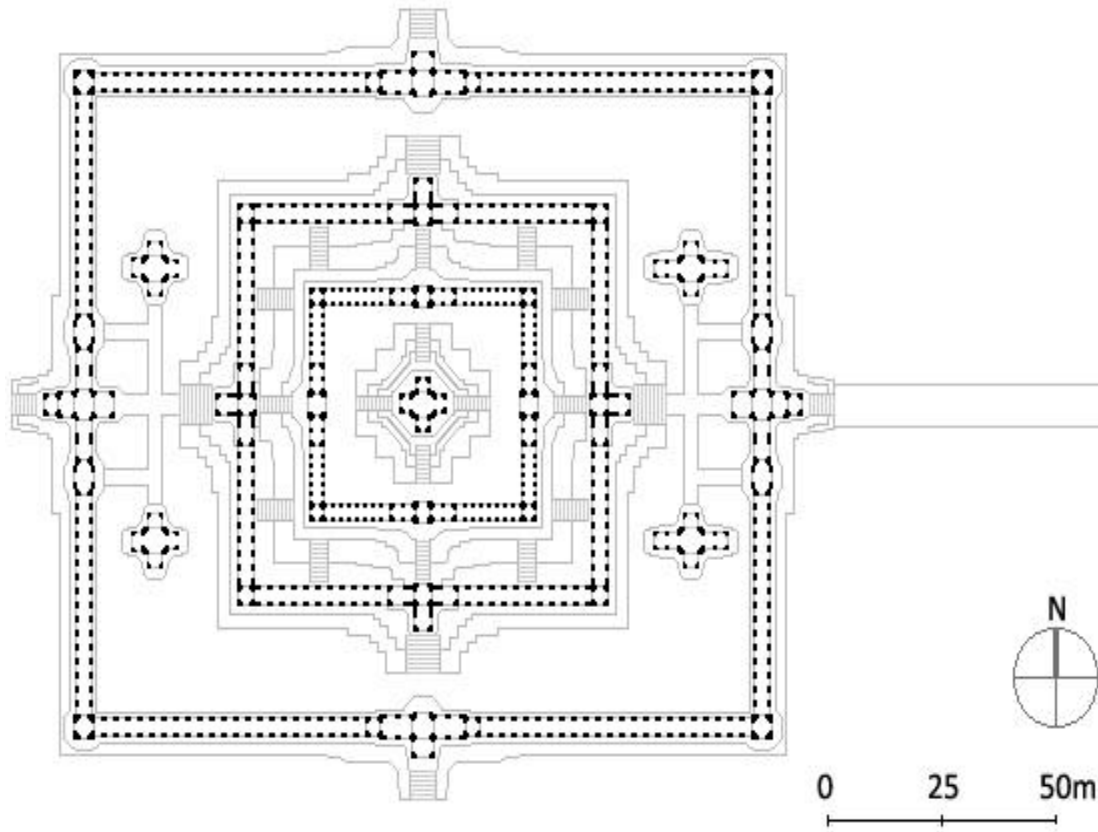
THE ARCHITECTURE OF THE BAPHUON

Architecture. The Baphuon temple is the prototype for the Baphuon style of design which covers every available surface with intricate carvings. These carvings include both realistic and fanciful depictions of lotus flowers, wild animals and hunters, devata figures, and men in battle. There are also carvings with indirect references to Hindu mythology and scenes illustrating epic poems such as the Ramayana. The sandstone temple-mountain symbolically represents the sacred five-peaked Mount Meru important in both Hindu and Buddhist cosmology. There are three enclosures in the Baphuon temple complex, and the main structure is situated on a high base. With the bronze tower that was part of the original structure it would have been roughly 50 meters high, but without this tower it stands 34 meters tall. Zhou Daguan, a Chinese 'ambassador' in the 13th century, speaks glowingly of the temple, describing it as a 'copper tower'. This suggests that the entire temple may have once been sheathed in bronze plates.



As with Angkor Wat, the Baphuon was converted to a Buddhist temple in the 16th century. This involved the demolition of the outer galleries, causeway stones, and other structures to reuse the material for construction of an enormous reclining Buddha statue on the west side of the temple. The work was never completed, however, and the half-finished Buddha is only barely distinguishable.

As the Baphuon was built on unstable soil it has not proven as durable as other nearby temples. As early as the 1960s the EFEO (École française d'Extrême-Orient) decided to begin restoration of the temple using the anastylosis technique, which involved disassembly of large portions of the temple and reconstruction using the original stones and replacements as needed. However, this work had to be abandoned in the 1970s when the Khmer Rouge came to power. By that time, the EFEO had completed the disassembly phase of the reconstruction. Over 300,000 stones were laid out in a 10 hectare area surrounding the temple. The EFEO maintained careful records of the original position of each of the stones, but the records were lost or destroyed during the Khmer Rouge period. In spite of this, archaeologists working from 1995-2002 were able to reassign the locations of most of the stones, and reconstruction was carried out from 2002-2011. The reopening of the temple took place on July 3, 2011.



Plan of Baphuon

Drawn by Timothy M Ciccone following Claude Jacques, Michael Freeman, and Jean Laur.



The period between 12th and 19th century was largely of religious wars and geo-political instability across the Indian subcontinent, and the literature of this era do

not mention Masrur temples or present any scholarly studies on any Hindu, Jain or Buddhist temples for that matter, rather they mention [iconoclasm](#) and temple destruction.

After the 12th century, first northwestern Indian subcontinent, then India, in general, witnessed a series of plunder raids and attacks of Turko-Afghan sultans led Muslim armies seeking wealth, geopolitical power and the spread of Islam. Successive Muslim dynasties controlled the Delhi Sultanate as waves of wars, rebellions, secessions, and brutal counter-conquests gripped Indian regions including those in and around Kashmir. The Mughal Empire replaced the Delhi Sultanate in early 16th-century. The Mughal dynasty ruled much of the Indian subcontinent through early 18th-century, and parts of it nominally through the 19th century.

The Kangra valley region with Masrur in the Himalayas was ruled by smaller jagirdars and feudatory Hill Rajas who paid tribute to the Mughal administration for many centuries. The arrival of the colonial era marked another seismic shift in the region's politics. By the late 19th century, British India officials had begun archeological surveys and heritage preservation efforts. The first known visits to study the Masrur temples occurred in 1887.

COMPARISON of the DESIGN of PRASAT AUK UM and the 11 th Century BAPHUON with MASRUR temple India

Masrur temple: symmetry of design

At first, it seems an extravagant and confused mass of spires, doorways and ornament. The perfect symmetry of the design, all centering in the one supreme spire, immediately over the small main cell, which together form the *vimana*, can only be realized after a careful examination of each part in relation to the other.

—Henry Shuttleworth, 1913

The Masrur temple and the 8th-century *Prasat Ak Yum* and the 11 th Century *Baphuon* temple found in Siam Reap, Cambodia have parallels, in that both are temple mountains with a symmetric design . The main monument at the Masrur temples site appears, at first sight, to be a complex of shrines, but it is an integrated monument Its center has a principal shrine which unlike most Hindu temples does not face east, but faces Northeast towards the snowy Himalayan peaks of Dhauladhar range. The main spire is flanked by subsidiary spires of smaller size, all eight symmetrically placed to form an octagon (or two rotated squares). These spires of the temple seem to grow out of the natural rock that makes the mountain. Above the main sanctum, the rock was cut to form the flat roof and the second level of the temple naturally fused with the rising main spire (*shikhara*) as well as the eight subsidiary shrines.

Some structures and the plan at Masrur temple (1913 sketch, incomplete)

The main sanctum has four entrances, of which one on the east side is complete, two on the north and south side are partially complete and the fourth can be seen but is largely incomplete. The eastern entrance had a large mandapa and a portico, but this was destroyed in the 1905 earthquake, its existence known from site visit notes prior to the earthquake. Attached to this mandapa were two stairs to take the pilgrims to the upper-level views. The stairs were set inside smaller two rotating stair spires, but much of the structure of this too is gone. Thus, at one time the main temple had 13 spires according to Hargreaves count, and 15 according to Shuttleworth's count, all designed to appear growing naturally out of the rock.

According to Meister, the early descriptions though well-intentioned were based on information then available and clouded by the presumptions of those authors. These presumptions and generally damaged condition of the complex, for example, led Shuttleworth and Hargreaves to describe the temple in terms such as "subsidiary" and "shrines" instead of witnessing the integrated plan and architecture in early Hindu texts on temple design.

Material of construction

The temple complex was carved out of the natural sandstone rock. In some places, the rock is naturally very hard, which would have been difficult to carve, but is also the reason why the intricate carvings on it have preserved for over 1,000 years. In other places the stone was soft or of medium quality. In some cases, the artists carved with a bit softer stone and this has eroded over time from natural causes. In other cases, the stone's hardness was so low that the artists cut out the stone and substituted it with better stone blocks. Then they added their friezes or sculptures. The substituted blocks have better resisted the effect of nature and time.

Pool and mandapa

The temple complex has a sacred pool in front on the east side. The construction of the sacred pool is dated to the early 8th century. Its rectangular dimensions are about 25 by 50 metres (82 ft × 164 ft), or two stacked squares. The temple had an outside square mandapa with about 27 feet (8.2 m) side and 20 feet (6.1 m) height. It had a solid 1.5 feet (0.46 m) thick roof supported by four carved massive pillars. The platform had a covered drainage system to allow water anywhere on the mandapa to naturally drain off. This was visible before the 1905 quake, now only remnants of the floor and a pillar remain.



Two views of the temple pool.

The entrances lead the pilgrim and visitor towards the main sanctum, through a series of mandapas with wall carvings and then an *antarala* (vestibule). They also connect the created space to a pair of covered stairs, on the north and south side, to the upper floor from where he or she can complete a *pradakshina* (circumambulation) to view more sculptures and the mountain scenery, all of this space and structure created from the pre-existing monolithic rock.

Sanctum and ceiling.

1. The garbhagriha, in a square plan with each side of 13 feet (4.0 m). The main sanctum has a four faced Shiva.
2. The ceiling of various mandapa and the sanctum inside the temple are fully carved, predominantly with open lotus.

However, the inside walls remained incomplete. This may be because the artists carving into the rock worked on cutting and finishing the ceiling first, then moved on to cutting, finishing and decorating the inside walls and creating pillars below those ceilings. The wall height is 16 feet (4.9 m), and only the eastern entrance and passage into the sanctum is fully complete, while the side entrances are not and the fourth western entrance being the least complete. The site suggests that the work was completed in parallel by teams of workers. This is a common style of construction found in numerous Hindu temples that have survived, at least in the ruins form, from the 1st millennium. The 8th-century three-entry, four-faced Shiva found at the Masrur temple is not unique as the same plan is found in the Jogesvari Cave temple near Mumbai. The Jogesvari is dated to have been completed between 400-450 CE, or several centuries before the Masrur temple's construction, suggesting a common thematic foundation that inspired these temples pre-existed in the Hindu texts.

The art historian Stella Kramrisch identified one of these Hindu architecture texts to be the *Visnudharmottara*, dated to have existed by the 8th-century (floruit), and whose manuscripts have been found with Hindus of the Kashmir valley. This is one of such texts that describe "hundred-and-one [Hindu] temple" designs. According to Meister, the sanctum and spire plan for the Masrur temple fits one of these, where it is called the *Kailasa* design.

The Kailasa style of Hindu temple is one with a central Shikhara (spire) symmetrically surrounded by four smaller spires set between the four entrances into the temple from the four cardinal directions, a format that matches the Masrur temple plan. Further, the *Visnudharmottara* text also describes the principles and procedures for image making and painting, the former is also found preserved in the Masrur temple mandapa and sanctum. Further, the Jogesvari and Masrur are not the only surviving temples that correspond to this style, others have been discovered that do, such as the Bajaura Hindu temple in Kulu valley of Himachal Pradesh which is another stone temple.

The multi-spire style, states Meister, is possibly inspired by the Indian Meru mythology shared by Buddhists, Hindus and Jains. Lush mountainous Meru is heaven and the abode of gods, but mountains are not singular but exist in ranges. The highest Mount Kailasha is the abode of Shiva, and the secondary spires symbolize the mountain range. Eight heavenly continents surround the Mount Kailasha in this mythology, where all the *Deva* (gods) and *Devi* (goddesses) live together. The Masrur

temple symbolically projects this mythical landscape, narrating the Indian cosmology from stone, into stone.

Spire design

All spires in the Masrur temple are of *Nagara* style, an architecture that was developed and refined in central India in the centuries before the 8th-century. More specifically, these are what Indian texts called the *latina* sub-style, from *lata*. These are curvilinear spires composed of a rhythmic series of superimposed shrinking horizontal square slabs with offsets, each offset called *lata* or grape vine-like, in principle reflecting natural growth on a mountain in stone.



One of the spires with lintel carvings. BAPHUON on the RIGHT 2 pics

The superstructure towers embed styles that are found in Indian temples from the 7th and 8th-century such as in the Mahua Hindu temple and the Alampur Navabrahma Temples, but these are no longer found in temples that can be firmly dated after the 8th-century. This supports dating the Masrur temple to about mid 8th-century. The spires show differences, but all spires that are symmetrically position in the temple mandala show the same design. The stairway spire is based on four turned squares, and features eight rotating *lata* spines that alternate with eight right-angled projections.

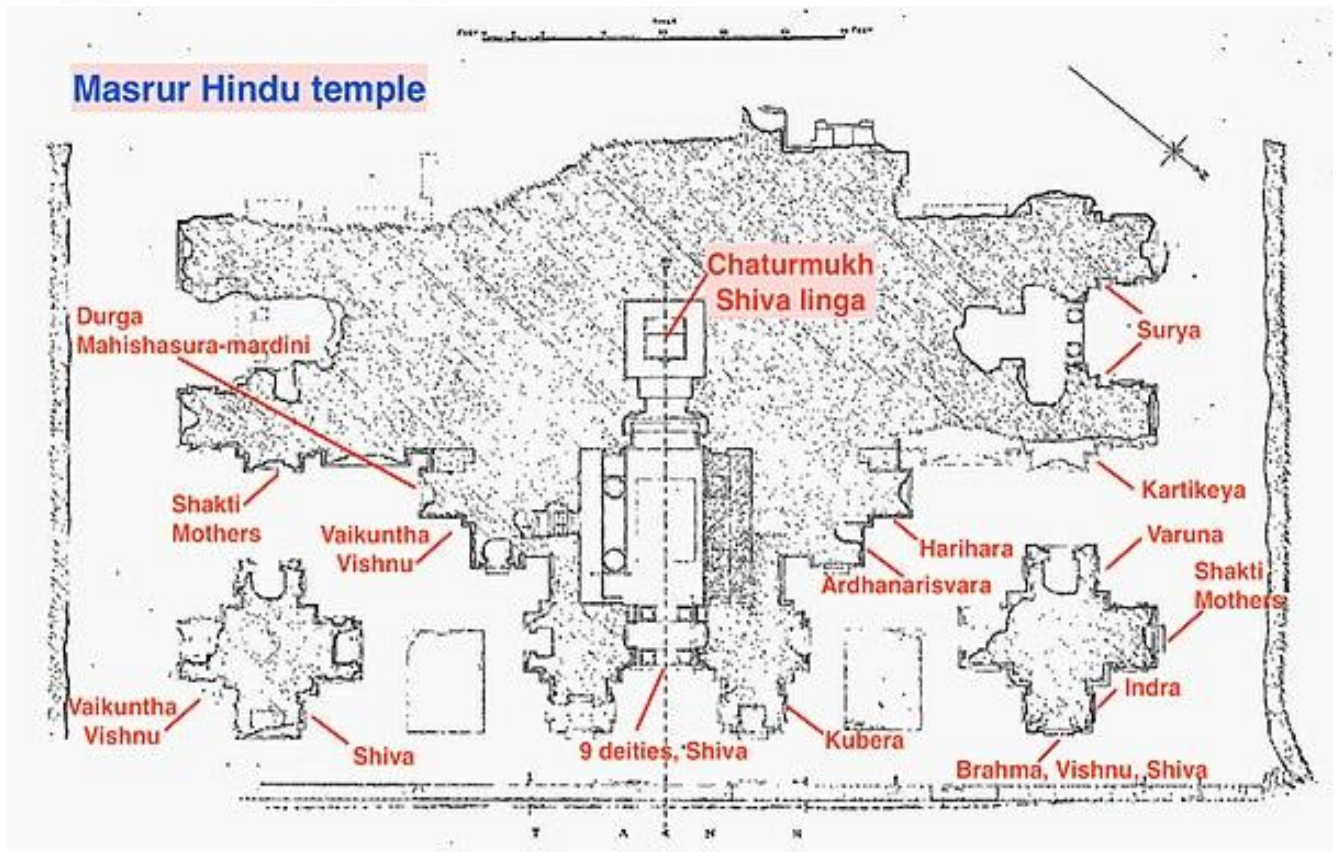
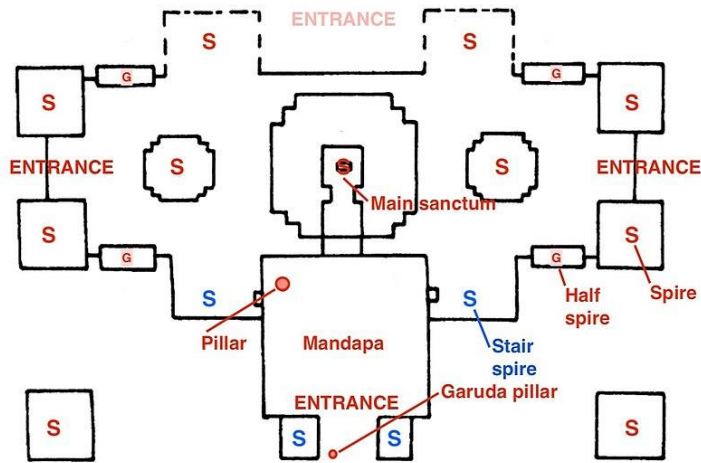
The temple complex also has two free-standing sub-shrines near the sacred pool. These have spires with sixteen *lata* spines, a style that is uncommon in India and found associated with Shiva temples associated with Hindu monks of the Matamayura *matha* between the 7th and 12th century CE such as the Bajaura temple in nearby Kulu valley and the Chandrehi temple in central India.

Sculpture and reliefs

The main sanctum has nine seated deities. The center one is Shiva, and with him are others including Vishnu, Indra, Ganesa, Kartikiya and Durga. The shrines around the central shrine feature five Devis in one case, while other shrines reverentially enshrine Vishnu, Lakshmi, Ganesha, Kartikeya, Surya, Indra and Saraswati. The avatars of Vishnu such as the Varaha and the Narasimha are presented in the niches. In the ruins have been found large sculptures of Varuna, Agni and others Vedic deities. The temple also includes fusion or syncretic ideas revered in Hinduism, such as Ardhanarishvara (half Parvati, half Shiva), Harihara (half Vishnu, half Shiva) and a three faced trinity that shows Brahma, Vishnu and Shiva in one sculpture. The temple also has secular images from the common life of people, of couples in courtship and various levels of intimacy (*mithuna*), people making music and dancing, *apsaras* and ornamental scrollwork.

The surviving structures in the Masrur temple lacks any image of Lakulisa, the founder of Pashupata Shaivism, which makes it unlikely that this temple was associated with that tradition. According to Meister, the wide range of Shaiva,

Vaishnava, Shakti and Saura (Surya, sun god) themes displayed within the Masrur temple suggest that it was built by those who cherish ecumenism or henotheism, of the style commonly found in Pancharatra literature of Hinduism.



The Masrur rock-cut temple presents a diversity of iconography, likely reflecting ecumenism or henotheism in 8th-century Hinduism. Above: Incomplete iconography locations.¹

Pilgrim resthouse

According to Hargreaves, when he visited the temple for the first time in 1913, the temple complex had a dharmashala (pilgrim's resthouse), a kitchen and there was a

priest for whom there was a small integrated living quarters. The temple work was priest's part-time work, while his main source of livelihood was from maintaining cattle and working in farms.

First Direct Dating for the Construction and Modification of the Baphuon Temple Mountain in Angkor, Cambodia

Sampled parts within each crampon are shown in white. Schematic drawings of the microscopic metallographic observation on the cross-section after Nital etching enlighten the distribution of the carbon content within the metal. The black marks within the metal of the most carburized samples, selected for the radiocarbon measurements, indicate the fingerprint of the drill samples. 2 dates were obtained for each crampon BPN-30001 and BPN-30002. Both samples BPN-30009(1) and BPN-30009(2) from BPN-30009 could be dated therefore providing 2 dates for the crampon.



Documentation of the dated specimens.//
doi: <https://doi.org/10.1371/journal.pone.0141052.g003>

REFERENCES

Meister, M. W. (2006). Mountain Temples and Temple-Mountains: Masrur. *Journal of the Society of Architectural Historians*, 65(1), 26–49. <https://doi.org/10.2307/25068237>

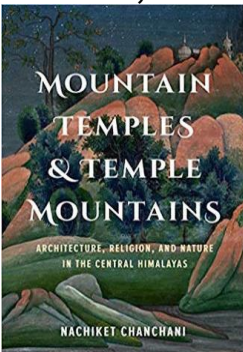
Cambodian Architecture, Eighth to Thirteenth Centuries, Authors: Jacques Dumarçay and Pascal Royère

Series: Handbook of Oriental Studies. Section 3 Southeast Asia, Volume: 12

***Bapuon* [បាបួន] (p. 1). (n.d.). [Photographs].**

<https://jstor.org/stable/community.27703029>

Mountain Temples and Temple Mountains: Architecture, Religion, and Nature, Nachiket Chanchani, Global South Asia, Seattle, WA: University of Washington Press,, March, 2019.



Bapuon Relief work on stone to extreme RIGHT



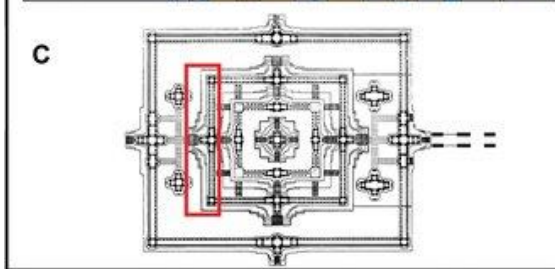
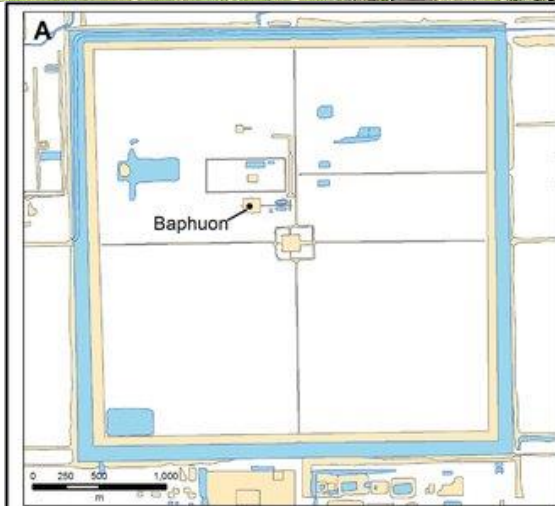
©EFE0 / Temple du Baphuon modélisé en 3D.



Water colour painting of Baphuon by Lucien Fournereau



Front Door

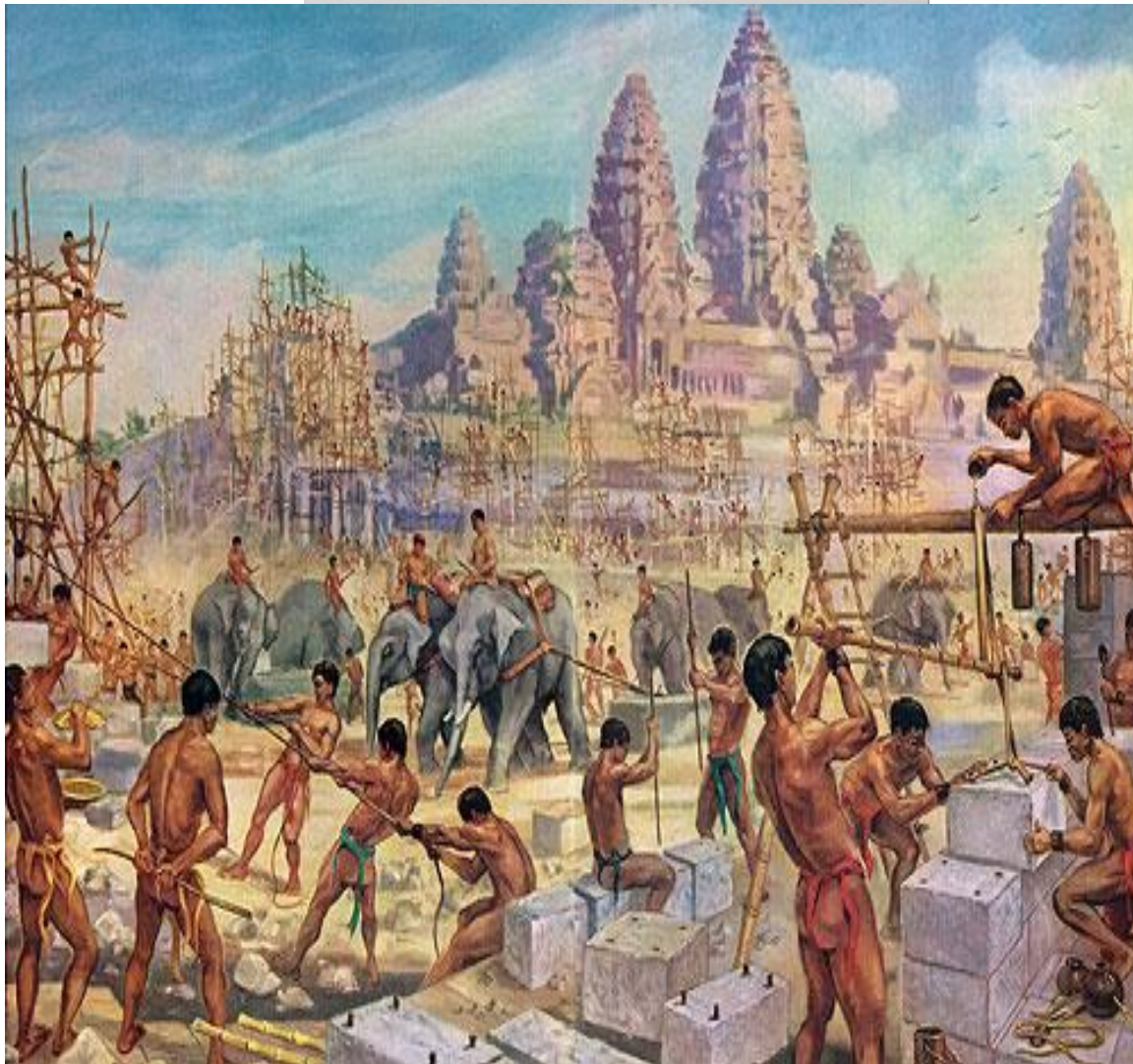


CHAPTER XI
Celestial Significance of the
TEMPLE MOUNTAIN of Angkor Wat
With rare paintings of the Temple



Legend behind Angkor: Angkor the most mysterious of temple mountains, has intrigued humanity from the day it was “discovered”. We have been trying to understand how it was constructed and how such a detailed design could be made as a drawing to start with and then brought into fruition by completing the construction within 40 years.

I have written 3 books on the Angkor DEVRAJA in which I have described in detail the construction design elements together with my co-author Srishti Dokfras who happens to be an Architect and also my daughter. We have worked together on 7 books and 167 research papers and articles. We recommend you go to academia.edu and researchgate.net for some delightful readings of this book. You will also find a tome on the Borobudur temple there.



To start with let us examine the legend behind it.

The most widely accepted legend is that of a Brahmin prince by the name of Kaundinya who hailed from South India, married a Naga princess from this region and thus started the rule of the Somavansha or the race of the moon. This is supported by inscriptions found at Misan in Champa (present-day Vietnam). There are some other non-supported legends about a banished Hindu prince, who married a Naga lady, daughter of Nagaraja and established the kingdom of Kambuja (old name of Cambodia). Another legend holds that the union of Maharshi Kambu and the Apsara Mera symbolized the merger of the Solar and Lunar Dynasties that resulted in Kambuja. Ancient Indian civilization had expanded towards the east and had come into contact with inhabitants of this area and thus was born the nation of Cambodia with Indic Influences (Hinduism and Buddhism).

Sandstones of Angkor

Structure: The height of Angkor Wat from the ground to the top of the central tower is surprisingly high-213 meters (699 feet). The height was achieved with three rectangular or square levels. Each one becomes progressively smaller and higher starting from the outer limits of the temple. Covered galleries with columns define the boundaries of the first and second levels.

The third and uppermost level supports five towers-one in each of the corners and one in the middle-which are the most prominent architectural feature of Angkor Wat. Graduated tiers, one rising above the other, give the towers a conical shape and, near the top, rows of lotus flowers taper to a point. The overall profile of each tower is reminiscent of a lotus bud.



Several lines stand out in the architectural plan of Angkor Wat. The eye is drawn left and right to the horizontal aspect of the levels and upward to the soaring height of the towers. The ingenious plan of Angkor Wat only allows a view of all five towers from certain angles. They are not visible, for example, from the main entrance. Many of the structures and courtyards are in the shape of a cross. A curved sloping roof on galleries, chambers, and aisles is a hallmark of Angkor Wat. From a distance the roof looks like a series of long narrow ridges but close-up one sees gracefully arched rectangular stones placed end to end. Each row of tiles is capped with an end tile at right angles along the ridge of the roof. The scheme culminates in decorated tympanums with elaborate frames. Several elements repeated throughout the monument give an architectural rhythm to the whole. Galleries with columns, towers, curved roofs, tympanums in sects of graduated sizes, structures such as libraries and entry towers in a cross-shaped plan, and steps and steps and steps occur again and again. By combining two or more of these features and superimposing them, height was achieved and one part of the monument was linked to another. Roofs were frequently layered to add height, length, or dimension.

A smaller replica of the central towers was repeated at the outer limits of two prominent areas—the galleries and the entry towers. Angkor Wat occupies a rectangular area of about 500 acres defined by a laterite wall. The first evidence of the site from the west is a moat with a long sandstone causeway stretching for 200 meters across it and serving as the main access to the monument. At the end of the causeway there is a massive entry tower consisting of three sections. The upper portions have collapsed and thus do not reveal the full impact of the original form. A long covered gallery with square columns and a curved roofs extends along the moat to the left and right of the entry tower. This majestic facade of Angkor Wat is a model of balance and proportion and is a fine example of classical Khmer architecture.

Visitors can easily miss the beauty of Angkor Wat at this point as they rush on to see the more renowned sight of the five towers—visible only beyond the first entry tower. As one passes through this tower, there is an even longer causeway of 350 meters bordered on each side by a low balustrade resembling the body of a serpent.

Straight ahead is the celebrated view of Angkor Wat—the symbol of unity that appears on the new Cambodian flag. Standing at this point one feels compelled to 'get to the wondrous group of the five domes, companions of the sky, sisters of the clouds, and determine whether or not one lives in a world of reality or in a fantastic dream'. Walk slowly down the causeway and take in the architecture along the way which gradually introduces the visitor to the style that culminates on the third level. Two buildings, so-called libraries, stand in the courtyard on the left and right of the causeway. These rectangular

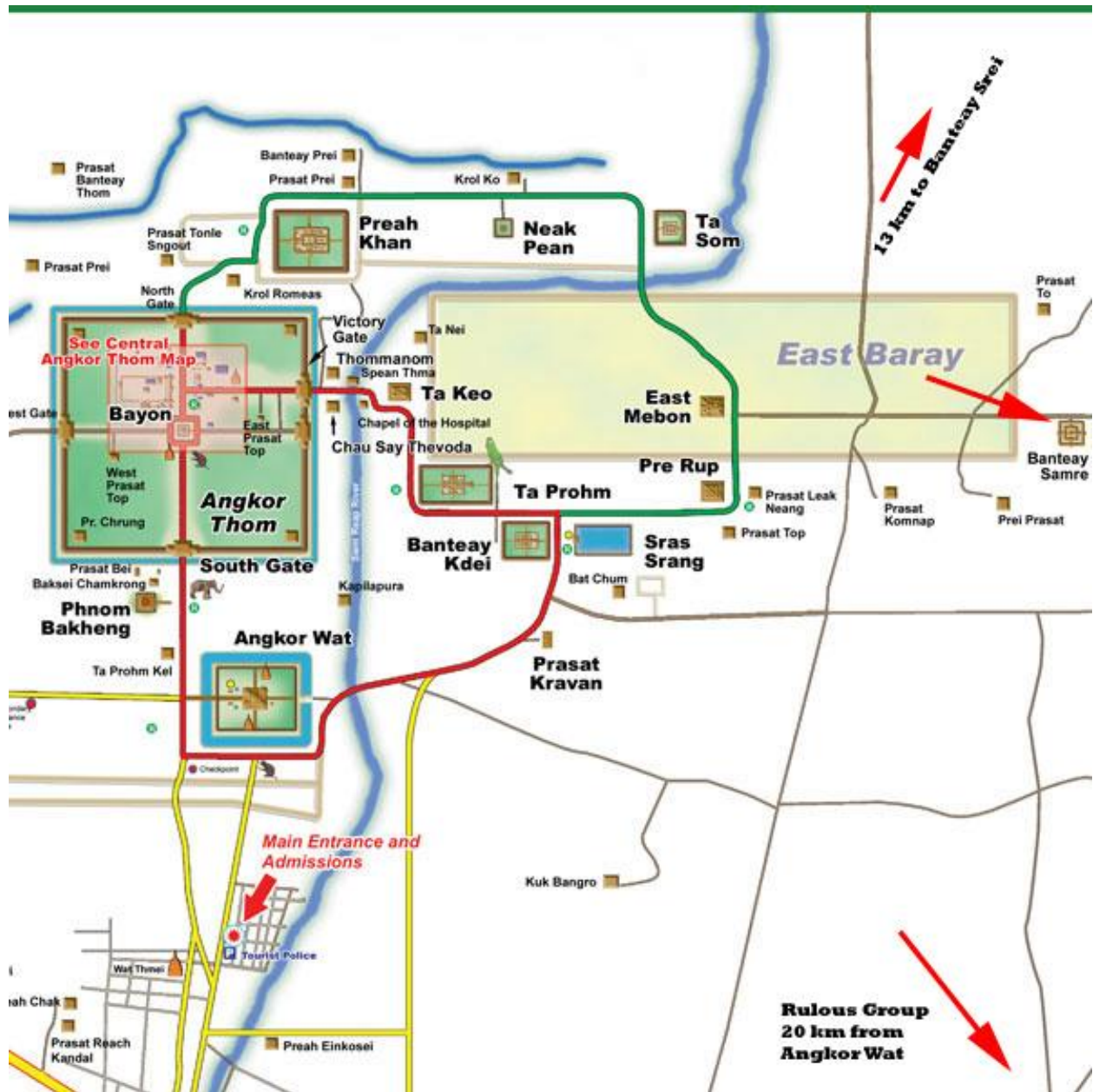
buildings usually occur in pairs outside the sacred enclosure. Their function is unknown but they may have served as a store rooms for offerings and sacred objects. The designation 'library' originated with French archaeologists who discovered scenes from a Hindu legend of the 'Nine Planets of the Earth' carved on the libraries. Because of the association with astronomy they interpreted this to mean that the building served a scholarly function and named it a library.

The modern name, Angkor Wat, means "Temple City" or "City of Temples" in Khmer; Angkor, meaning "city" or "capital city", is a vernacular form of the word nokor (នគរ), which comes from the Sanskrit word nagara (नगर). Wat is the Khmer word for "temple grounds" (Sanskrit: वाट vāṭa ""enclosure").

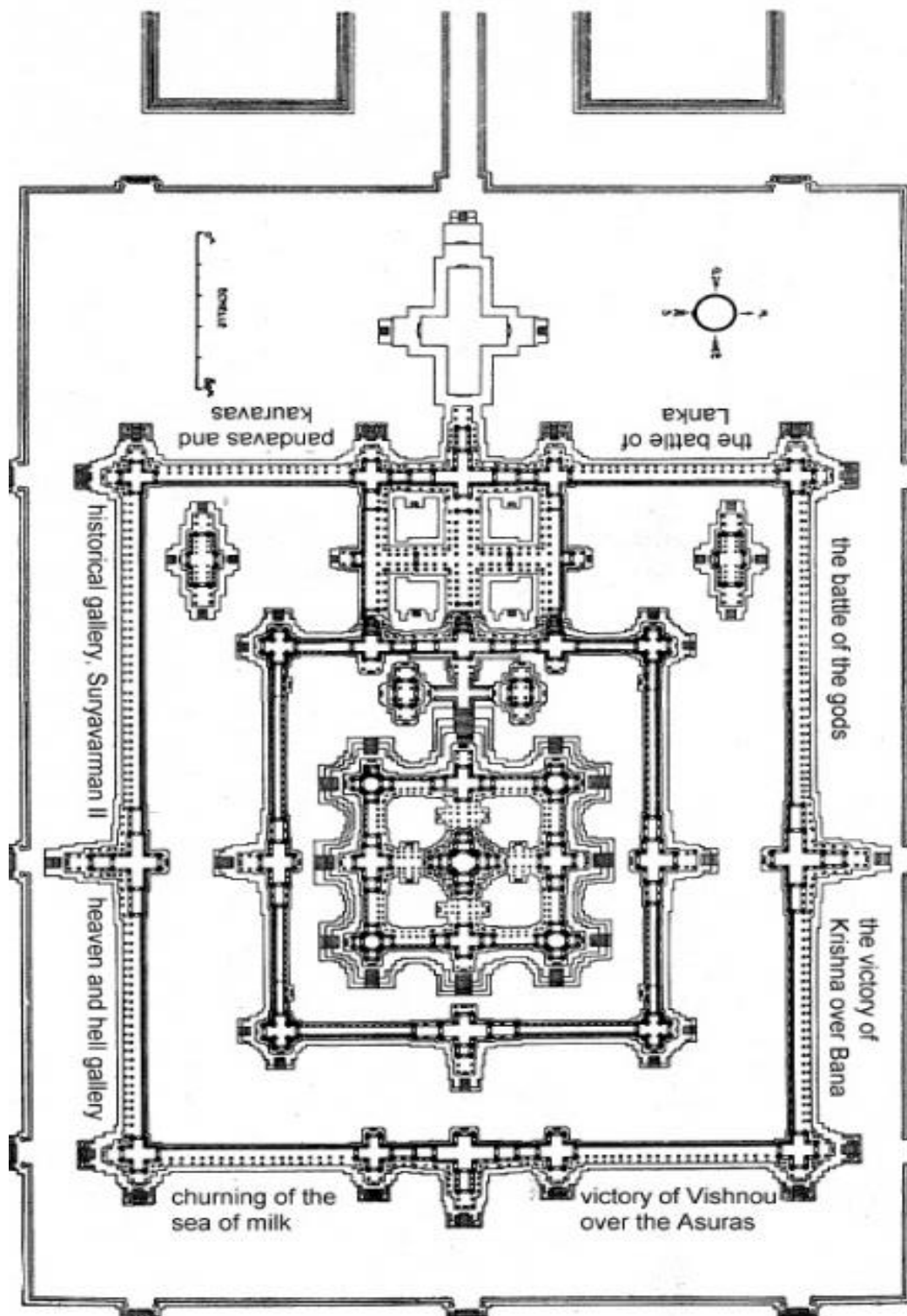
Religious architecture varies from culture to culture, as not all civilizations subscribe to the same religious beliefs. Even those that embraced the same religion as Christianity do not celebrate their beliefs in the same manner. Likewise, the architecture in their places of worship is unique depending on the aesthetics, cultural patterns, and the activities of the community.
Religious Buildings, Structure, and Inclusivity.

Nowadays, religious buildings like churches and mosques are places where a whole community could come together and worship. This was not always the situation when it came to the ancient civilizations. Synagogues, mosques, temples, and churches held the images and important artifacts of their religions, but they were not open for public usage. The exclusivity of these ancient religions shows in their place of worship, which are commonly built for the extravagance of their deities and the entrance of religious personnel or persons of privilege.

For example, in India and ancient Egypt, religious structures can only be entered by priests as they are believed to be the residences of the deities themselves. While in Ancient Greece, people are allowed to glimpse the images of their deity; however, worship rites are only done outside the temple. In Mayan and Aztec culture, even a few prominent people in the community are allowed to approach their temple's immediate vicinity.



Even though a lot of mainstream religions today are communal and inclusive, only a few of the early faiths encouraged communal participation, and these are Islam, Christianity, Buddhism, and Judaism. The aspect of a whole community gathering can be reflected in these buildings.



Shrines and Funerary Art

Angkor Wat in Cambodia is believed to be the funerary **temple for King Suryavarman II**. It's an orientation to the west to conform to the symbolism between the setting sun and death. Angkor which signifies "incredible city" was the capital of the Khmer Empire. Shrines are holy places that commemorate the life of a religion's founder, gods, saints, or deities. These buildings contain religious images and artifacts that are of significance to the faith and the god or person that the building celebrates. In the Christian religion, the most famous shrines are the Church of the Nativity located in Bethlehem which commemorates the life of Jesus Christ, and the lives of the Apostles and the early Church Fathers such as the famed St. Peter's Basilica in Rome.

Angkor Wat, located at 13°24'45"N 103°52'0"E, is a unique combination of the temple mountain (the standard design for the empire's state temples) and the later plan of concentric galleries. The construction of Angkor Wat also suggests that there was a celestial significance with certain features of the temple. This is observed in the temple's east-west orientation, and lines of sight from terraces within the temple that show specific towers to be at the precise location of the sunrise on a solstice..The temple is a representation of Mount Meru, the home of the gods: the central quincunx of towers symbolises the five peaks of the mountain, and the walls and moat symbolize the surrounding mountain ranges and ocean. Access to the upper areas of the temple was progressively more exclusive, with the laity being admitted only to the lowest level.

Angkor Wat, Siem Reap Overview

In Northern Cambodia lies one of the largest monuments in the world. Angkor Wat is a treasured Buddhist temple and the allure of the Angkor Archaeological Park. Located 6 kilometres north of Siem Reap, Angkor Wat is considered as the gateway to the ruins of Angkor. This temple is a national icon and source of pride for Cambodia, and is also proudly displayed on the national flag.

The city of Angkor in which lies the Angkor Wat temple was built in the 12th century by King Suryavarman II of the Khmer empire. The park is spread across an area of roughly 400 square kilometers, making it the largest pre-industrial city in the world. The park shouldn't be considered as just a collection of different temples and monuments. Angkor was a well-established city, and the temples were a part of that flourishing city. The main temple among them all was Angkor Wat, which has been rebuilt many times by different kings of the Khmer empire and later the kings of other dynasties according to their preferences. The ruins of Angkor feels like you've entered a completely different world where the lines of reality and fantasy have become blurred.

Angkor Wat History and Significance

Built between roughly A.D. 1113 and 1150, and encompassing an area of about 500 acres, Angkor Wat is one of the most significant religious monuments ever constructed. The temple was initially designed and built during the first half of the 12th century on the orders of the then emperor Suryavarman II. Originally a temple dedicated to Lord Vishnu, Angkor Wat gradually shifted from a Hindu center of worship to a Buddhist one in the 14th century. The original name is still unknown since no inscription or foundation stela was found from that time.

Angkor Wat temple has a 65 meters central tower which is surrounded by four smaller towers and a series of enclosure walls. The layout is similar to that of Mount Meru, a legendary place in Hindu mythology that is said to lie beyond the Himalayas and be the home of the gods.

One of the most exciting and mystical elements of the temple is the location. Angkor Wat is located at 13.41 degrees north in latitude and that the north-south axis of the central tower's chamber is 13.43 cubits long. Historians have debated that this location is not an accident. This location is along the axis of the earth, in the centre to be precise. In the central sanctuary, Vishnu is not only placed at the latitude of Angkor Wat, but he is also positioned along the axis of the earth. It was the knowledge that the Khmer people possessed at a time when the world was thought to be flat. This location is a marvelous example of how this civilization already knew that the earth was round.

Not just these, but the sophisticated geometry of the structures indicates that celestial significance was kept in mind while designing the temple. It perfectly aligned with the constellation Draco as it appeared in the sky during the spring equinox of the year 10,500 BC which is considered remarkable knowing that they had no assistance from advanced technology. In short, Angkor Wat is, arguably, the most spectacular temple you will ever see, on a scale you can't imagine.

The civilization in the Indian Subcontinent had been highly developed since ancient time. When trades became flourished between the East and the West, the Indian traders sailed to this region to establish Indian trading posts in order to collect goods and products during the off monsoon season. These traders brought with them their civilization, cultures, philosophy and religions. During those days, the indigenous people were far less civilized than the Indian travelers and it was not surprising to find that they accepted many aspects from their foreign folks by which they deemed to be better and beneficial.

Among these aspects were the religious and cultural elements of the Indian civilization. The natives adopted Hinduism as their religion and its gods Shiva and Vishnu were revered as their supreme gods. During the Funan period (I – IX centuries), which was a predecessor of the Khmer civilization, the Brahmins, a learned caste of India, were invited into the royal courts to help in administration. In addition to the religious belief, the natives also learned the

engineering skills such as the irrigation system as well as stone carving from the Indian Brahmins.

When the Khmer civilization evolved in early 9th century, the Khmers inherited several elements from its precursor as well as those from the Indian civilization. Along with many other aspects of their culture, the Cambodians inherited Indian methods of architecture and then absorbed them into their own architectural style. Once the Indian influence on the kingdom was no longer significant, by the seventh to eighth centuries AD, Khmer architecture began to develop independently. It flourished under ambitious kings who ruled an empire rich in manpower and wealth. Both these factors were essential in bringing about the larger building projects undertaken at Angkor in the 11th and 12th centuries.

Devraja: Khmers' first king Jayavarman II (800 – 850) introduced the cult of devaraja into Cambodia, establishing the king as a representative of the Hindu god Siva. His regime was more or less a model of the successful Indian monarchy. Numerous impressive temples and monuments were built throughout the empire during those successive centuries in order to praise the Hindu gods. From this time temples were being built to honor both the god and the king. During the next two reigns, the practice of each new king building his own temple, which became his tomb on his death, was firmly established (Angkor Wat). We collectively know these monuments as the Angkor Temples, and the most famous ones are the Angkor Wat and the Angkor Thom, both of which resided on the vast plain of Siemreap in Cambodia. The word "Angkor" is derived Sanskrit, an ancient Indian language, of "Nagara" which means "City". Angkor Wat literally means "City of Temple" and Angkor Thom "The Magnificent City."

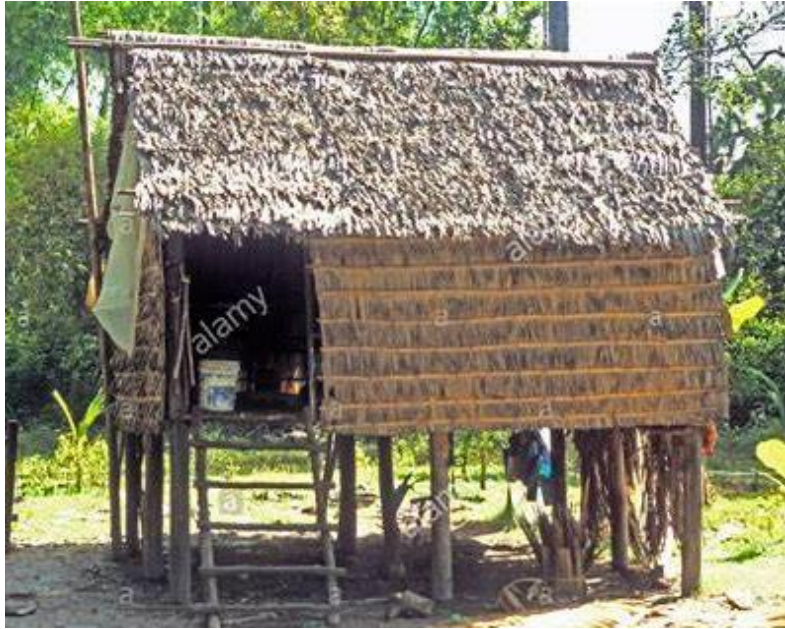
Angkor Wat is the world's largest religious building and the finest of all the Khmer architectural wonders. It is but the most impressive and most perfectly constructed of numerous temples whose extensive ruins survive to form one of the world's largest historical sites. Taking 37 years to complete and involving the labor of an estimated 50,000 artisans, workers and slaves, the temple forms a rectangular enclosure measuring 1,500 meters by 1,300 meters and surrounded by a moat 200 meters wide. Inside the outer walls, the structure is built up over three levels rising to a central core topped by five distinctive towers, the tallest reaching 65 meters. The proportions alone are spectacular, while the long galleries feature walls decorated with low-relief scenes of epic legends, war and courtly life. All the temple mountains of Angkor were filled with three-dimensional images and every inch of the walls are covered by sculptures. Virtually every surface in a labyrinth of chambers and courtyards is richly decorated and carvings of nearly 2,000 apsaras, or celestial dancers, appear like a visual refrain of a beautiful melody (Angkor Wat).

Angkor Wat complex spreads an area of some 400 square kilometers and there are more than 100 major archaeological monuments and numerous lesser remains. The lands where the city of Angkor stands were not chosen as a settlement site because of any pre-existing sacred importance, but rather for their strategic military position and agricultural potential. In time however,

over the half-millennia of Khmer occupation, the city of Angkor became a great pilgrimage destination. Angkor Thom Temple was also significant in the evolution of Khmer architecture as the first temple complex. It is quadrangle of defensive walls totaling 12 kilometers that once protected the Khmer capital. It built in the late 12th and early 13th centuries by King Jayavarman VII. The walls are divided by two axes running north-south and east-west. A gateway lies at the end of each axis, four in total, facing the four cardinal directions. It was a well-planned and well laid out series of buildings surrounding several central shrines. These buildings were set around courtyards, and avenues linked each courtyard. The less important buildings were located at the outer edges of the complex, with the most important ones and the shrines in the center. The whole complex was surrounded by a moat.

Cambodians in ancient were superstition; thus, they built their buildings base on the legends they believed. According to Hinduism, the gods reside in the five sacred mountains with central Mount Meru and these mountains are surrounded by the cosmic ocean. The structure of the Khmer temples mostly symbolizes the heavenly residence of the gods with five towers, called prasats. The central dominant tower or prasat represents the Mount Meru with four smaller ones, each at its corners, to represent the other four sacred mountains of the heaven. In some temples, there are galleries connecting the towers. The moat surrounding the temple symbolizes the cosmic ocean. As the residence of gods, the temples were made up of more endurable materials such as the bricks, laterites and sandstones. Numerous stones were carved with artistic craftsmanship to portray the gods and the deities, the epics of Mahabharata and Ramayana, and in many instances, the important events of Khmer history as well as that of the king who was its founder. For the temples dedicated to Buddhism in the later centuries, the architecture is much less prominent with some stone carving related to the stories of Lord Buddha and his teaching.

The houses of the local people in ancient Khmer were more or less similar to those found today in villages of modern Cambodia. It was elevated about two and a half meters above the ground with the wooden ladder and was built by wooden piles, which supported the floor, the walls and the roof. The wall was made up of either the straws or the bamboo with the roof covered with the thatched leaves of dry coconut palms (Architecture). The architecture of the dignitaries' houses and the palaces was somewhat different from those of the laymen, and differed in sizes, layouts and dimensions. The materials used to build the house consisted of stronger wooden planks, generally made up of teakwood, and the roof was covered with tiles for the inner rooms and with thatched leaves for the outer corners. These differences clearly identified the classes of the people by which the laymen were not even dare to put up a single tile



on their roof.

The architectural vividness of Angkor was not separated from its engineering genius. In addition to the remarkable temples, the ancient Khmer also had showed its architectural genius by building large reservoirs and dikes, which were essential in agriculture as well as for the survival of the people. The two largest reservoirs were the East Baray and the West Baray. The former one, built during the reign of Yasovarman I, was 7 1/2 kilometer long and 1 km 830 meters wide with the depth of 4-5 meter. The latter was almost twice larger. These reservoirs collected the water from the nearby rivers through dikes and help significantly to prevent floods by collecting water from heavy rainfall during the Monsoon season. There were also smaller reservoirs; many ponds and moats, which were constructed in the vicinity of the various temples, and thus further helped in water storage. This water was used in everyday life of the Khmer people, and irrigated to the farmland during the dry season.

In so mastering the annual cycle of floods and drought brought about by the alternating monsoon seasons, the ancient Khmer were able to harvest two and even three rice crops a year. From this rich agricultural base Angkor built up its power. As Coedes has commented in *Angkor: An Introduction*, there is a vital connection between the regal power symbolized in the temple-mountain and the practical mastery of water. "The fact is well known," the historian wrote, "that a rice-growing country is dependent upon a regulated system of irrigation which in turn is dependent on a strong and stable central authority. If the control breaks down, the water ceases to work its benefits, and abundance gives way to misery." (Coedes). Bountiful crop production not only sustained a huge population perhaps as high as one million – it also freed large numbers of peasants from agricultural work. Manpower was thus available for extending and securing the boundaries of the empire and for building the massive stone temples of the god-kings (Angkor Wat). There was also extensive road system in ancient Angkor Empire during its peak. These roads were built

by raising the earth as the pavement, however, most parts of these roads were lost but some vestiges remain. The Angkor being at the center of the civilization had its roads branching out in all directions.

Multi towers: As the Khmer civilization reached its full flowering the temple form evolved from a single tower to a multi-towered structure of Angkor Wat and Angkor Thom. Moreover, while early shrines stood at ground level, later temples were grandiosely raised on terraced pyramids. Vaulted galleries were introduced to link individual sanctuaries into a single, intricate temple complex. Materials also evolved, from wood for the earliest prototypes to brick, laterite and finally sandstone, the last lending itself to the relief carving which defines Angkor's finest temples almost as distinctively as the architecture itself. These and other changes reached a climax at Angkor Wat.

Problems: There were, however, significant problems, which the architects had to overcome and some of their building methods contributed to the early collapse of their temples. Sandstone blocks were prepared carefully to fit together, but vertical joints were allowed to run on top of one another making walls very unstable. So, often a whole wall fell if one stone near the base became dislodged. No mortar was used; just a good fit, weight and gravity was thought sufficient. The Khmers never learnt how to build an arch. European architects who built the vaulted Gothic cathedrals used complex arches to cover a space, a technique that had been handed down to them from the Romans over centuries of development. The Khmers had no such example to copy. In order to overcome this difficulty, they used the false arch, or corbelling. Large stones were piled on top of one another, reaching inwards as far as possible and touching at the top. An arched roof over a space was thus formed, but it was not as stable as the real arch, and these vaults often collapsed (Architecture).

In the beginning of 1200, the Angkor and the Khmer empire started to decline. As neighboring states of the Angkor grew, they became a major threat to the empire. When Jayavarman VII died, the Thai Empire in the West emerged as a major power in the region. In order to protect the empire, the Angkor had to direct portion of its manpower to secure strong armed forces, which in turn, deprived itself from giving good maintenance to its irrigation system. The road network built by Jayavarman VII had aided the transports of products and trades throughout the empire and also facilitated the Khmer troops to quell its neighbors. It had become a double-edged sword when the Angkor became weak as the invaders could easily marched in through this road network, instead of previously sailing up from the Mekong River. This turned out to be true when the newly emerged Ayuthaya, a Thai kingdom in the West became stronger. They use this road to march to attack right at the heart of Angkor and finally sacked the empire in 1431. The glory of the Angkor Civilization was terminated since that time. The city was deserted and the capital was moved to Eastward to the region of the present capital Phnom Penh (Britannica).

Relics: , Angkor Wat, Angkor Thom and several other Khmer temples are undoubtedly the relics of the past Khmer Civilization. Angkor is prominent because of its temples, and these massive stone monuments that constitute the

Khmer civilization's greatest legacy. Angkor represents one of humankind's most astonishing and enduring architectural achievements. Lawrence Briggs makes the point in his book *The Ancient Khmer Empire*. "The Khmers," he wrote, "left the world no systems of administration, education or ethics like those of the Chinese; no literatures, religions or systems of philosophy like those of India; but here oriental architecture and decoration reached its culminating point." (Briggs).

H

History and Significance of the Temple

Angkor Wat's original name in Sanskrit was Vrah Viṣṇuloka or Parama Viṣṇuloka which translates as "the sacred dwelling of Vishnu." Its current name of Angkor Wat was derived from the Khmer language, which means "City of Temples" or "Temple City." The temple is located 3.4 miles north of Siem Reap, a modern Cambodian town. Legends surround the origin of the temple. A Chinese traveler from the 13th century, Zhou Daguan, held the belief that the temple rose up in a single night due to the work of a deity. Other stories tell that the temple was ordered to be constructed to serve as a palace for Precha Ket Mealea, the son of Indra.

In light of these legends, historic annals record that the design and construction of the temple could be tracked back to the twelfth century under the reign of Khmer ruler, Suryayaman II from 1113 to 1150. The temple initially served as a temple to the Hindu god, Vishnu and the as the capital city and state temple of King Suryayaman II. During the late 12th century, Angkor Wat gradually converted into being a Buddhist temple and exists as a center for Buddhism up to the present time.

The Architecture of Angkor Wat

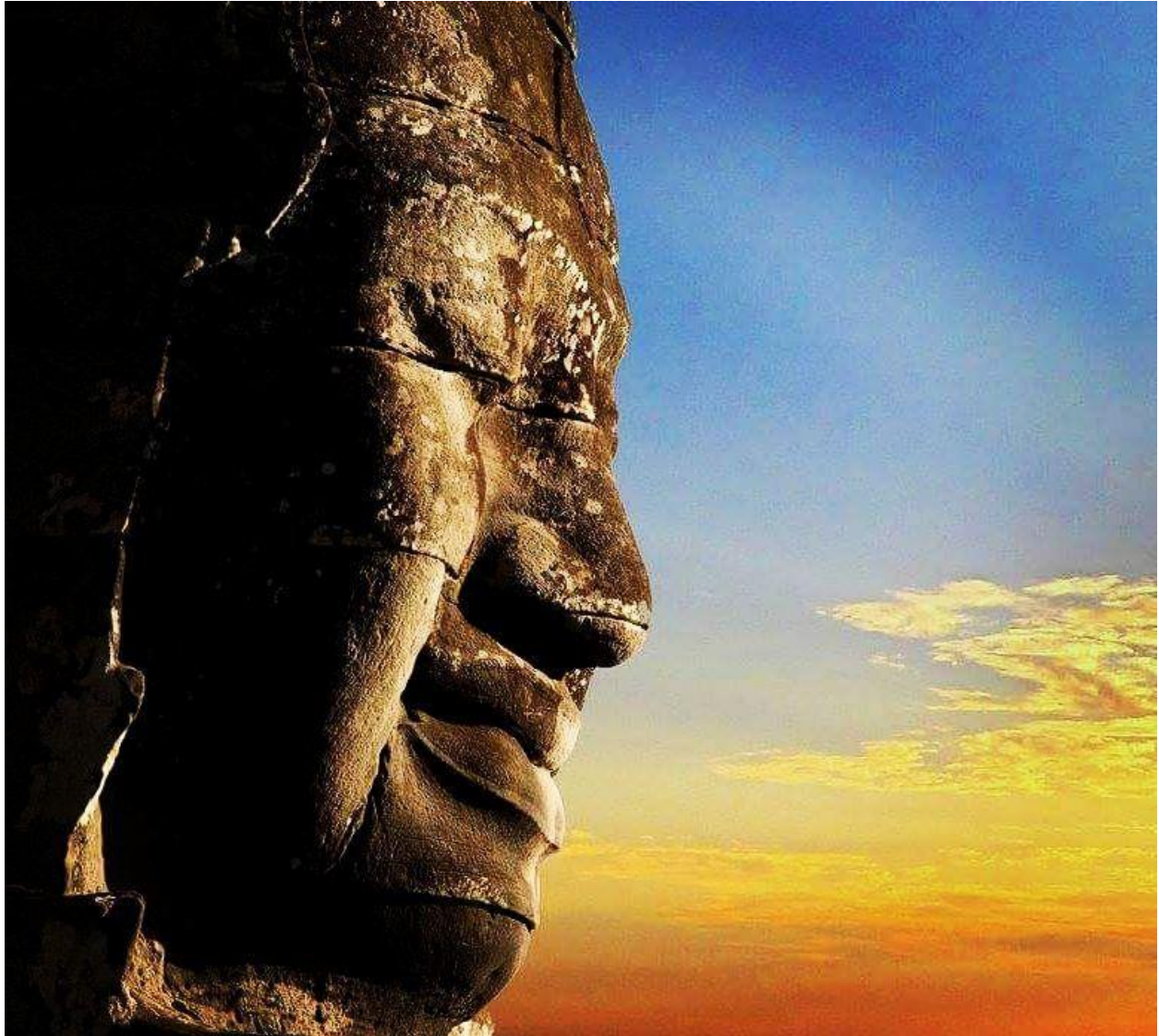
As a temple, Angkor Wat is a combination of architectural temple plans prevalent in Khmer culture. This includes the newer galleried temple and the temple-mountain structure. Locations of certain towers indicate important points during solstices, which suggests that the planning of the temple's layout was based on some significant celestial considerations.

The mountain temple of Angkor Wat is also considered to be a representation of Mount Meru. It is a five-peaked mountain that is of religious significance to Hinduism, Buddhism, and Jain cosmology. It is the center of the universe and considered to be the dwelling place of the gods. The parallelism with Mount Meru could be seen in the quincunx towers central to the temple which mirrors the five peaks of the mountain while the surrounding walls and Moat of the temple were made to represent the ocean and mountain ranges surrounding Mount Meru.

The decorative style of the temple also reflects Khmer architecture. Elements of this historic architectural style include towers shaped similar to lotus buds or the ogival towers; cross-shaped terraces along the main temple, and axial and half-galleries that connect to other areas of the temple. Decorative elements include narrative scenes and elaborate garlands in the temple pediments.

Apsaras or devatas, the depiction of nymphs or heavenly female figures dancing, and bas-reliefs can also be found in the structures of the Angkor Wat.

Angkor Wat combines two basic plans of Khmer temple architecture: the temple-mountain and the later galleried temple, based on early Dravidian architecture, with key features such as the Jagati. It is designed to represent Mount Meru,



home of the devas in Hindu mythology: within a moat and an outer wall 3.6 kilometres (2.2 mi) long are three rectangular galleries, each raised above the next. At the centre of the temple stands a quincunx of towers. Unlike most Angkorian temples, Angkor Wat is oriented to the west; scholars are divided as to the significance of this. The temple is admired for the grandeur and harmony of the architecture, its extensive bas-reliefs, and for the numerous devatas adorning its walls.

Historical Significance

The Angkor Wat served as the capital of the Khmer Empire, and also a strategic military post.

With curiosity the original name of the Angkor Wat is unknown, Historians have been unable to locate any artifacts or inscriptions that refer to the temple complex by its name.

Large amounts of the Angkor Wat remain unfinished, though due to historian research and theory it is thought that construction stopped when Suryavarman II died.

Cultural Significance

Suryavarman II greatly respected the god Vishnu, a god often painted and seen as a protector, so Suryavarman II installed a statue of the god Vishnu in Angkor Wat's central tower. This devotion can be seen as one of the most remarkable reliefs at the Angkor Wat, with the god located in the southeast of the temple. This relief shows a chapter in the Hindu story of the creation known as the 'churning of the sea of milk'

Bayon-Historical Significance

There was originally 49 towers standing but today only 37 are standing.

Most towers have four carved faces on each cardinal point, though there are some with three faces or even two.

The Bayon has had several architectural changes, this is because the city of Angkor Thom was so well fortified that later kings realised it would be easier to re-model the Bayon instead of removing it and creating their own state temple which would have been in the exact same place (at the centre of the city).

Bayon-Cultural Significance

The temple is very complex when it comes to structure and meaning, having it passed through different religious phases from Pantheon of the Gods, Hindu Worship and Buddhism.

This is one of most enigmatic and powerful religious structures in the world.



Cosmological Connection

Perhaps the most striking characteristic of Angkor Wat is that it perfectly aligns with the constellation Draco as it appeared in the sky during the spring equinox of the year 10,500 BC. Many speculate at the significance of this and how it could have been accomplished in an age without assistance from advanced technology, but it is an undeniable fact that Angkor Wat was constructed to fit harmoniously with the world surrounding it. The overwhelming level of sophistication within the temple geometry shows that its builders hoped to create a deeper connection with the universe through what they believed to be sacred numerology. Angkor Wat was not built out of the vanity of a dictating leader, but instead was made as a tool to help people make a tangible connection with divinity. Each measurement is connected to each other measurement based on ancient astrological observations, and it has even been postulated that Angkor Wat could be a sort of highly sophisticated calendar or cosmic clock.

The mysteries of the complex at Angkor Wat have puzzled man for generations, and it will continue to draw attention as more people attempt to spread the word of its incredible secrets in the hopes that the truth will be exposed. The whole city of Angkor was said to have been built as a colossal diagram of precession to embed specific astronomical numbers and constants. One of these “cosmological myths” portrayed at Angkor is the famous *Churning of the Sea of Milk*. It covers a bas-relief almost 50 meters long inside Angkor Wat’s eastern gallery. 92 Deva and 88 Asura (*for a total of 180 figures*) pull the serpent *Vasuki* for one thousand years around Mount Mandara, which serves as the axis of the World and (*according to Santillana and Von Dechend*), the ecliptic North Pole around which the constellations revolve as a consequence of precession. More recently, the Angkor expert Eleanor Mannikka has pointed out that even the division in 92 Deva and 88 Asura very accurately marks the number of days between the Winter solstice and the Spring equinox in March and the number of days between the Summer solstice and the equinox respectively. Also, the whole of Angkor Wat would have functioned as a giant calendrical clock, providing a 3-days warning of the Spring Equinox: An observer along the Western causeway would have seen the sun rising exactly on top of the central tower of Angkor Wat on each of the 3 days preceding the Equinox and then on the Equinox day from a different position moved more towards the center of the platform. Similarly, the lateral towers of the Western gateway would have served as solstitial markers for an observer located right outside the bridge main entrance.



While this can certainly be no coincidence, the ancient builders of Angkor Wat also embedded a wealth of astronomical information in the main dimensions of their temples. The main axial measurements of the temple as taken from the moat and along the western causeway yield, with almost exact precision, the values of the Hindu cosmological cycles of 432,000; 864,000; 1,296,000; 1,728,000 years (*here expressed in Khmer cubits of 43.54 cm*). Also, the sum of

the lengths of the axes of the perimetral wall of Angkor Wat (*divided by 12*) yields a length of 365.24 cubits, which is the same as the length in days of the solar year. The same figure for the outer encircling wall (*divided by 24, as the number of lunar half-phases in one year*) yields 354.36 cubits, which is the length (*in days*) of the lunar year.

According to another scholar, the historian and mathematician Shubash Kak, Angkor Wat consists of at least three astronomical and architectural units which are part of single giant cosmic diagram .

1. The central sanctuary (*that is Mount Meru*), symbolizing the celestial North Pole, the Earth axis and the spring Equinox
2. The outer corridors and concentric galleries, which symbolize the ecliptic and the Earth's and planetary orbits, the cycles of the moon, the constellations and the solar and lunar years
3. The four axes of the temples, which represent the cosmic ages and the cycles of time.

The most strikingly astronomic monument is however located a mere hundred meters from Angkor Wat, on the mountain *Phnom Bakheng*. It is a 5-tiered pyramid, 76 meters wide at its base, surmounted by 4 towers and a central sanctuary. A total of 104 smaller towers stand on the lower terraces, which add up to 108 once the 4 towers on the top are added. This makes 27 towers on each side, the same as the number of days in a lunar month. In turn, the lateral towers and the central sanctuary mark the position of the Sun at the two Solstices and at the Equinox. Of the 60 towers that stand on the upper 5 terraces, there are 12 on each terrace, the same as the number of years in the Jupiter cycle, considered the base of the Khmer sacred calendar. Not surprisingly Phnom Bakheng has been described as *an astronomic calendar in stone*. But the same may be said of other famous Angkor monuments, such as the *Bayon*, with its 54 towers, and the *Pre Rup*, which also contains a total of 27 towers.

Moving further into the field of Earth-Sky analogies, independent researchers Jean-Pierre Lacroix and Robert Bywater believe they have found proof of gigantic planetary diagrams on the ground of Angkor, modeled after ancient Hindu astronomic systems. The theory of Lacroix and Bywater is too complex to be treated in sufficient detail so only the outline will be given here. It is "*a theory about the relationship between the locations of the principal Khmer monuments (and in many instances their orientation and internal measurements) and components of enormous Indian planetary diagrams "drawn virtually" on the Angkorian ground using the parameters of the "Midnight System"*.

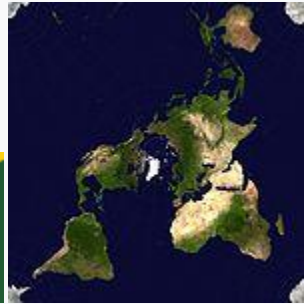
The "*midnight system*" is in fact one of two geocentric models proposed by the Hindu astronomer and mathematician Aryabhata in the early 6th Century AD. The model allows to predict with a high degree of accuracy the exact position of the inner and outer planets (*including that of the Sun and the Moon*) on a

specific date, based on the intersection of a circle called *deferent* (centered on the observer) and a combination of two epicycles called *Manda* and *Sighra*. The two authors believe they have found proof of the knowledge of the “*midnight system*” by the ancient Khmer in an inscription from the temple of Banteay Srei referring to the position of the planets during a highly significant planetary alignment that was recorded by Khmer astronomers on the midnight of April 22nd, 967 AD. On that date the planets were clustered around the same portion of the night sky within the *Pisces* constellation as they were at the beginning of the Kali Yuga – *the last cycle in Hindu cosmology* – which supposedly began on February 17th, 3,102 BC. The origin of this planetary model may indeed be extremely ancient, as it is found already in pre-Vedic inscriptions and astronomical recordings from the Harappan culture at Harappa and Mohenjo-Daro.

The ancient Khmer, however, did not clearly limit themselves to recording astronomical dates, but wanted to portray them through colossal diagrams on the ground as part of their own sacred geography. Astonishingly, Lacroix and Bywater believe that “*The Khmer kings moved their successive capitals across Cambodia for various political reasons, but we suggest they wanted also, in some cases, to obey the rules of sacred geography related to planetary diagrams or, conversely, to use a new location to create or complete a planetary diagram*”; thus providing an explanation for the unexpected surge in building activity that characterized the beginning of the Khmer empire. According to the two authors, this set of planetary diagrams that covered the whole of the ancient Khmer empire, were brought to light by temples built on key locations, which in turn “*reveals capacities, in the fields of astronomy, land-surveying and cartography, which exceed by far the know-how and accuracy previously attributed to Middle-Age scholars*”.

By establishing their prime meridian across the sacred mountain of *Phnom Bakheng*, the ancient Khmer were able to carry out a comprehensive survey of their vast empire, locating cities and monuments according to a celestial design. As an example, the two authors cite the anomalous orientation of the ancient site of Preah Khan of Kampong Svay, which is oriented 28° East from true North. This is along the same orientation of a line connecting the center of the *Sighra* epicycle used to describe the position of Saturn with an imaginary observer located on the hill of Phnom Bok nearby Angkor. Also, when measurements are taken using the *krta yuga* of 752.46 meters as the ancient Khmer land surveying unit, the distances between the neighboring as well as the more distant sites surprisingly yield exact integer numbers which are multiples of the main planetary dimensions and the measures of the epicycles.

Quincunx: Quincunx patterns occur in many contexts:



The flag of the Solomon Islands features a quincunx of stars. A quincuncial map. Cosmatesque pavements with the quincunx pattern

- In heraldry, groups of five elements (*charges*) are often arranged in a quincunx pattern, called *in saltire* in heraldic terminology. The flag of the Solomon Islands features this pattern, with its five stars representing the five main island groups in the Solomon Islands. Another instance of this pattern occurred in the flag of the 19th-century Republic of Yucatán, where it signified the five departments into which the republic was divided.
- In architecture, a *quincuncial plan*, also defined as a "cross-in-square", is the plan of an edifice composed of nine bays. The central and the four angular ones are covered with domes or groin vaults so that the pattern of these domes forms a quincunx; the other four bays are surmounted by barrel vaults. In Khmer architecture, the towers of a temple, such as Angkor Wat, are sometimes arranged in a quincunx to represent the five peaks of Mount Meru.
- A quincunx is one of the quintessential designs of Cosmatesque inlay stonework.

The colossal complex of lotus bud-shaped structures form a quincunx at the heart of the temple, creating a visual arrangement that resembles the home of the Hindu Gods- Mount Meru. This sacred abode is known to Hindus, Buddhists, and followers of Jainism as the true center of the spiritual and physical universe, around which the sun and planets are said to orbit.

Aspects of Angkor Wat seem to have a directional and proportional significance, hinting at a very sophisticated architectural scheme. The anterior face of the temple had a western orientation, diverging from the traditional Khmer building method which favored orientation to the east. The Western orientation of architecture symbolizes the underworld in Greek and Etruscan cultures, giving substance to the possibility of a similar association taking place at Angkor Wat.

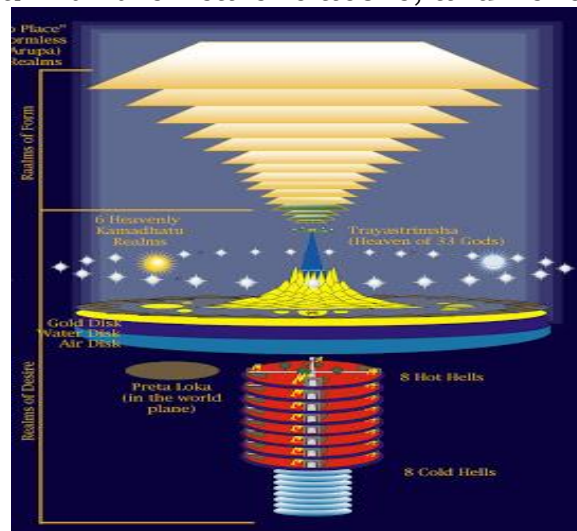
Furthermore, bas-relief sculptures were arranged along the chambers and passageways of the temple, depicting stories that proceed in a counter-clockwise fashion- a reverse order which hinted at the rituals of a Brahminic(Hindu) funeral. This motivated many academics to infer that Angkor Wat was used as a funerary temple for Suryavarman II.



Crowd waiting for sunrise during the equinox at Angkor Wat temple

Equinox, an astronomical event that marks a change in season, is the time in which the sun passes over the **celestial equator** causing the length of night and day to be roughly equal. In the northern hemisphere vernal equinox marks the beginning of spring while autumnal equinox marks the beginning of autumn. Vernal equinox is usually celebrated in March while autumnal equinox in September. In the southern hemisphere, it is the other way around.

Mount Meru: In the middle of the earth, surrounded by cosmic oceans, sits mythical mount Meru--840,000 miles high and home of the gods. The stars, planets, and even the earth itself revolve around it. Here is a diagram showing Mount Meru with the heavens above, and hells below.



The mountain appears in many Hindu myths, and is the model for the temple-city of Angkor Wat. The city's 200m wide moat is said to represent the cosmic

oceans, and the steep, many-



Surrounding the temple are galleries with long bas-relief carvings depicting scenes from Hindu mythology and the city's history. They don't make very dramatic photos (at least, not for me), but contain innumerable interesting small depictions.

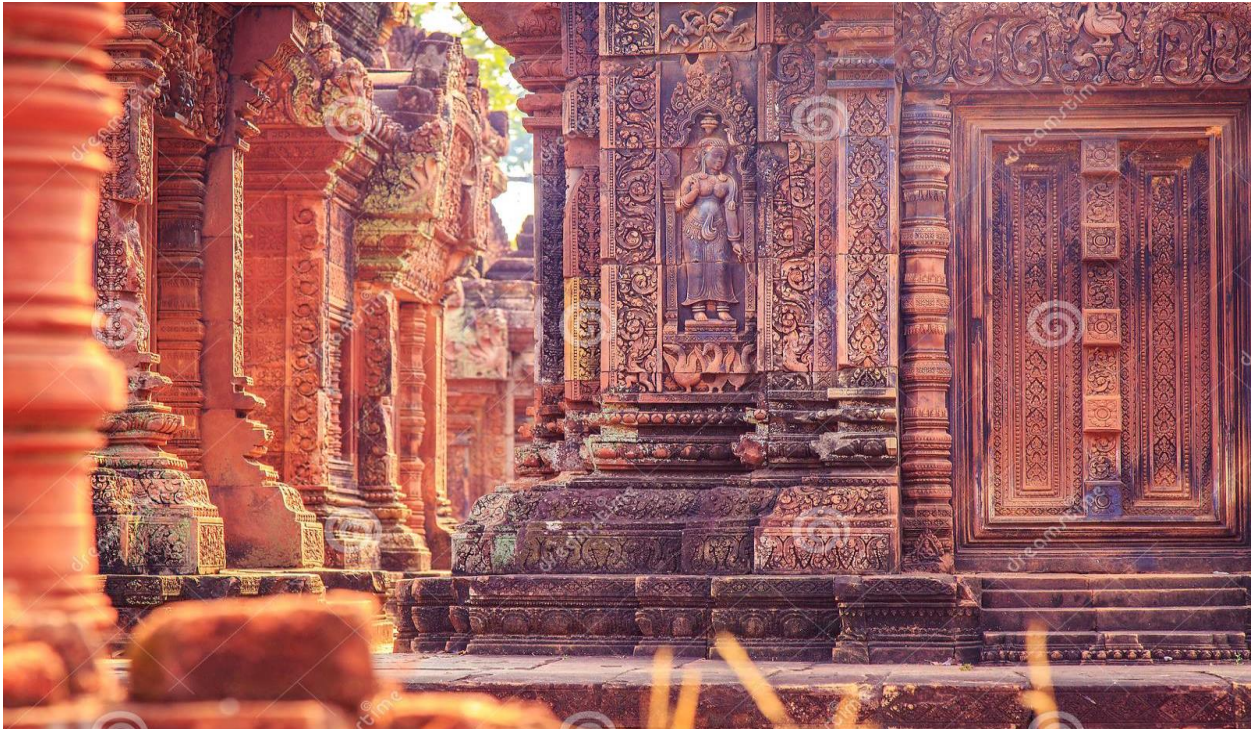
These two details, for example, is from a 50-meter long depiction of the epic battle of Kurukshetra--a battle between two sibling clans for the throne of Hastinapura. It is believed that the battle took place around 3067BC in the modern state of Haryana, India.



Here, for a sense of scale, is the full length of panels.



Phnom Penh

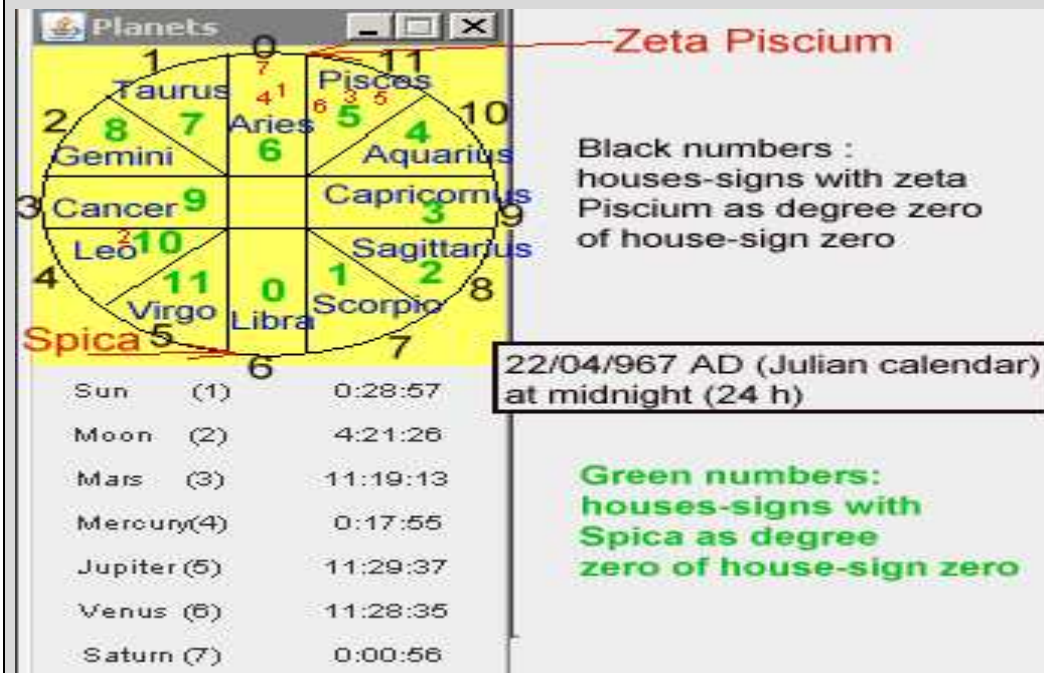


A set of interconnected planetary diagrams covering the Ancient Khmer Empire and brought to light by temples built on key locations reveals capacities, in the fields of astronomy, land-surveying and cartography, which exceed by far the know-how and accuracy previously attributed to Middle-Age scholars.

As a matter of fact, the locations provided by the inscription are **fully correct if we suppose the degree zero of the first house-sign was Spica instead of zeta Piscium**. It is worth remembering the Indian (and the Khmer) used to measure the « ayanamsa » ie the difference of ecliptic longitude between the vernal equinox and the star used as degree zero of their zodiac. These stars were either **Spica or zeta Piscium**.

By using Spica (the house numbers become those written in green colour in figure):

- **Sun, Mercury and Saturn** in house-sign **6** (**Aries** is house-sign 6 if Spica is degree zero).
- **Mars, Jupiter and Venus** in house-sign **5** (**Pisces** is house-sign 5 if Spica is degree zero).
- **Moon** in house-sign **10** (**Leo** is house-sign 10 if Spica is degree zero)



The basis of this research is the **stanza XLIV** of the inscription carved on the stele discovered in the fourth enclosure's gopura of the Banteay Srei temple. We are able to demonstrate the stanza provides the houses-signs where the planets, the Sun and the Moon were located on 22 april 967 CE (Julian calendar) at midnight (24 h) although the indicated locations are not, at first sight, compatible with the year when the temple was consecrated. The

« Siddhantic » software (HIC), created by Lars Gislén Calculates the following locations (figure here below) :

- **Sun, Mercury and Saturn** (red numbers 1, 4 & 7) were located in the house-sign **0** (numbers written in **black** colour in the figure). With zeta Piscium used as degree zero (usual convention), the three objects were crossing, roughly, the **Aries** constellation.

)

It is worth remembering the houses-signs were numbered **from 0 to 11**.

(F.G. Faraut : « Astronomie cambodgienne »)

- **Mars, Jupiter and Venus** (red numbers 3,5 & 6) were located in the house-sign **11** which corresponded to **Pisces**.

- **The Moon** (red number 2) was crossing the house-sign **4** which corresponded to **Leo**

Those locations are confirmed by modern software.

The stele's inscription provides houses-signs which don't correspond to the month (nor to the year) of the temple's consecration (22 April 967):

- **Sun, Mercury and Saturn** are described to be in house-sign **6** (at first sight **Libra**).

- **Mars, Jupiter and Venus** are described to be in house-sign **5** (at first sight **Virgo**).

- **Moon** is described to be in house-sign **10** (at first sight **Aquarius**). (more precise data provided by

<http://ancientcartography.net/22-04-967-midnight-4.pdf>

A11fV7QUWSMY

kMblFcVy1DkT7q

BIBLIOGRAPHY

1. Angkor: Celestial Temples of the Khmer Hardcover – April 26, 2002
2. by Jon Ortner (Author), Ian W. Mabbett (Author), James Goodman (Author), Ian Mabbett (Author), &2 more
3. "Angkor Wat." Britannica Student Encyclopedia. 2004. Encyclopædia Britannica Premium Service.
<http://www.britannica.com/ebi/article?eu=294605>>
4. Coedes, George. Angkor: An Introduction. Oxford University Press; Reprint edition 1986.
5. "Angkor Wat. Design and Architecture." Angkor Wat Information Pages. Homepage. 2003
<http://www.angkorwat.org/design_contents.html#design>
6. "Architecture. Khmer Civilization." History of Cambodia. Cambodia Travel Homepage. 2004 <<http://www.cambodia-travel.com/khmer/architecture.htm>>
7. Briggs, Lawrence Palmer. The Ancient Khmer Empire. White Lotus Co., Ltd. 1999.
8. Fleming, Stuart (1985). "Science Scope: The City of Angkor Wat: A Royal Observatory on Life?". *Archaeology*. 38 (1): 62–72. JSTOR41731666.

9. Aveni, A.; Romano, G. (September 1994). "Orientation and Etruscan ritual". *Antiquity*. 68 (260): 545–563. doi:10.1017/S0003598X00047049. ISSN0003-598X.
10. Tabish Khair, ed. (2006). *Other Routes: 1500 Years of African and Asian Travel Writing*. Indiana University Press. p. 115. ISBN978-0253218216.
11. The Architecture of Angkor Wat ,Dawn Rooney | Publication date 12 March 1993 |
12. Angkor: Celestial Temples of the Khmer Hardcover – April 26, 2002 , Jon Ortner (Author), Ian W. Mabbett (Author), James Goodman (Author), Ian Mabbett (Author), &2 more



The Temple Mountain Concept in Hindu Temple Construction

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