

**A STUDY ON HINDU TEMPLE PLANNING,
CONSTRUCTION AND THE VAASTU**

by

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of the requirements for the degree
of Masters of Science Building Technology**

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Abstract

A Hindu Temple should be designed to maintain its ancient aesthetics, mysticism, philosophy, design principle, components, quality, nature and comfort. This can be done with incorporating the Vaastu in building Hindu Temples. In Malaysia, there are no rules to govern the religious buildings. Therefore there are no scale to measure the quality of Hindu Temples. The existing Hindu Temples in Malaysia are of many scales; from icons under trees to medium scale temples. This dissertation, A Study on Hindu Temple Planning, Construction and The Vaastu is to analyse the relevance of Vaastu in building a Hindu Temple, with three temples in Pulau Pinang, Malaysia as the case study.

Vaastu is a study related to Building Science hence can be called Science of Building Technology of ancient time, which is also very similar to the modern one. This Science is Universal therefore can be applied to other buildings as well. Latest technology on materials and construction can be incorporated in a Hindu Temple, as long as it does not affect the Vaastu. In order to understand this study, the beliefs of Hinduism, types and characteristics and the components of Hindu Temples are discussed.

The study is analysed according to the Primary and Secondary Data. The case studies, the Primary Data are analysed according to The Site and The Temple Design. The analysis of The Site consists of The Sun Movement, The Slope and The Substructures. The Temple design consists of Shapes and Proportion, Measurements, Materials,

Construction Principles and Services. All these criteria are then compared among the three temples and with the ancient temple. Other Primary Data are interviews with various individuals related to the study and the data from internal publications. The Secondary Data are accumulated from articles, newspapers, brochures, magazines, books, other related dissertations, websites and e-groups.

Vaastu, the science applied in Architecture is explained in detail emphasising on the basis of Vaastushastra, which makes the criteria for the analysis. Other fields, which are of non-architectural matters but related to the Vastu; Astronomy, Astrology and Ritual Performances correlation and their importance, are explained briefly.

The site analysis according to Vaastu is basically good and would reap benefits. But the building itself and the materials do not comply fully to the rules and regulation of the Vaastu. The analysis proves that The Mariamman Temple is the best as per Vaastu. The Sundaresvarar Temple, a recently built temple does not fully incorporate Vaastu in its design. The existing shrine of Thirumurugan Temple is recently being constructed as per Vaastu. The temple built according to Vaastu should be able to provide psychological needs like peace and tranquillity to the visitors.

The case studies prove that Vaastu is important but is not fully incorporated in planning and construction of the temples in Malaysia. This study is hoped to bring the awareness of the importance of Vaastu, which is gaining recognition nowadays.

Abstrak

Kuil Hindu mesti direkabentuk dengan mengekalkan unsur-unsur purba seperti estetik, mistisisme, falsafah, prinsip rekabentuk, komponen, kualiti, sifat alam, dan keselesaan. Keadaan ini boleh dicapai dengan menggabungkan Vaastu dalam pembinaan Kuil Hindu. Di Malaysia, tiada peraturan yang khusus untuk pembinaan bangunan beribadat. Maka Kuil Hindu yang terdapat di Malaysia mempunyai pelbagai skala; dari ikon di bawah pokok sehingga ke kuil bersaiz sederhana. Disertasi ini, 'A Study on Hindu Temple Planning, Construction and The Vaastu', mengkaji kepentingan Vaastu dalam pembinaan Kuil Hindu dengan memilih tiga kuil di Pulau Pinang, Malaysia.

Vaastu ialah kajian mengenai Sains Bangunan maka boleh dikatakan Sains Teknologi Bangunan purba, yang sangat menyerupai yang moden. Sains ini boleh dikatakan Sejagat maka boleh diaplikasi pada bangunan lain. Teknologi terkini dalam bidang bahan binaan dan pembinaan boleh digabungkan dalam pembinaan Kuil Hindu jika tidak mengganggu Vaastu. Untuk memahami kajian ini, kepercayaan Hindu, jenis dan ciri-ciri, dan komponen Kuil Hindu diperbincangkan.

Kajian ini dianalisa menggunakan Data Primer dan Sekunder. Kajian kes, Data Primer dikaji mengikut Tapak Pembinaan dan Rekabentuk Kuil. Tapak Pembinaan merangkumi Pergerakan Matahari, Kelandaian dan Substruktur. Rekabentuk Kuil pula merangkumi Bentuk dan Proposi, Ukuran, Bahan Binaan, Prinsip Pembinaan dan Perkhidmatan. Kesemua kriteria ini dibandingkan di antara ketiga-tiga kuil dan juga dengan kuil purba.

Data Primer lain didapati dengan menemuramah individu yang berkenaan dan data dari penerbitan persendirian. Data Sekunder dikumpul dari artikel surat khabar, risalah, majalah, buku, disertasi lain, laman web dan 'e-groups'.

Vaastu, sains yang diaplikasi dalam Senibina dihuraikan secara terperinci dengan menekankan asas Vastushastra, yang juga membina kriteria untuk analisis. Bidang lain yang bukan berkenaan Senibina tetapi berkait rapat dengan Vaastu; Astronomi, Astrologi dan Upacara Amal dihurai secara am. Pembinaan tradisi mengikut Vaastu dibandingkan dengan kajian kes yang dibina secara kebiasaan pada masa kini.

Mengikut kajian kes berkaitan Vaastu, secara amnya tapak pembinaan kesemua kuil adalah baik dan akan membawa tuah. Tetapi bangunan dan bahan binaan tidak sepenuhnya mematuhi peraturan Vaastu. Kuil Mariamman adalah yang paling baik mengikut Vaastu dan diikuti oleh Kuil Sundaresvarar yang baru dibina. Kuil Thirumurugan pula tidak mematuhi Vaastu maka pembinaan baru dijalankan mengikut Vaastu.

Kajian kes ini membuktikan bahawa Vaastu adalah penting tetapi tidak diutamakan dalam pembinaan kuil di Malaysia. Diharap kajian kes ini akan membawa kesedaran tentang kepentingan Vaastu yang semakin dikenali pada masa kini.

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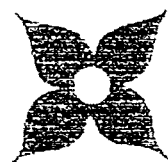
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1.0 INTRODUCTION

1.0 Introduction

Ancient buildings are always impressive. The magnificent structure and details are a masterpiece. These buildings have an order or pattern to it. It is not only the construction techniques and the materials that make the Hindu Temple a magnificent structure. It is the Vaastu, the ancient science, and the building technology that was used to construct it. It is believed that a Hindu temple, which is built according to the Vaastu, the structure itself can be prayed to.

The Hindu Temple, the abode of god, has been a proud structure of the Hindus. It is also the tourist attraction in many countries especially in India. It could be said that India has the most ancient and beautiful Hindu temples. In Malaysia, Hindu Temples are important for its pilgrimage and also as tourist attractions (the historical buildings). Most of the Hindu Temples in Malaysia are not built according to the Vaastu. Some temples, which are built according to Vaastu will have *sakti* or be powerful and will have a lot of devotee visiting it.

The Hindu Temple is considered as a part of Traditional Architecture of the Immigrant Communities in The Encyclopedia of Malaysia, 5 Architecture. In this book, under the 'Indian temple traditions' by Ramanathan (1998) it is said that, although the Indians in Malaysia form a minority ethnic group, they are prolific temple builders. The 17,000 or more Hindu temples and shrines scattered around the country not only range from simple roadside shrines dedicated to folk and tutelary deities to large temples dedicated to agamic gods and goddesses but also reflect the diverse religious practices within the

Hindu religion and other subethnic divisions based on caste, area of origin in India and community grouping.

The Vaastu is the traditional Building Architecture used in Hindu Temple Building. The Vaastu is a science of Building Technology. It is similar to Feng Shui, a discipline used in Chinese Architecture.

The Oxford Dictionary explains the meaning of these words;

- Building : house or other structure with roof and walls
- Technology : knowledge or use of mechanical arts and applied sciences
- Science : branch of knowledge involving systematised observation, experiment, and induction; knowledge so gained; pursuit or principles of this; skilful technique.

Vaastu is a design principle or order that has been tried and tested by the builders or *sthapathis*. It also can be said as 'Building Technology'. The Vaastu is not only for temple construction but can be used for other buildings as well because this knowledge is Universal and can be adapted to modern context.

This present study, A Study on Hindu Temple Planning, Construction and The Vaastu, is done to study the importance of Vaastu in Hindu Temple Planning and Construction.

Vaastu is the energy contained in the Universe, which is not visible to the eyes. Vaastu is the building, created by human by using the five elements of the universe and it is visible. The five elements are earth, water, fire, air and sky / space. A building is a living organism made of four gross elements at corner zones while the primal element of space (energy) acting at the centre. The space so enclosed is packed with three more elements at subtle level namely, sound, light and pulse / vibration. These are the eight elements that every animate is composed of. In Vaastushastra vibration, waves, sound and light are the active parameters in this science. Qualities are classified, based on orientation, directions and energy resources. Qualities of direction can be improved on the basis of the five great elements.

Mayan's concepts of Vaastu are taught in International Institute of Mayonic Science and Technology, Chennai, Tamilnadu India. Ganapati Sthapati, India's leading authority on Vaastushastra, follows the Mayan's ideas. One of the ideas is the Vaastu Purusha Mandala, a chart, which relates the layout to orientation of a site with energies, surrounds the environment. The shape of a good or ideal plot for any building constructions are square or rectangle. All other shapes are considered dynamically unbalanced and are considered useless. The shape and form influence lives. Shapes are very important in designing a structure. Shapes have some properties which enhances a building when it is used with proportion. There are two forms of shapes Symmetric and Asymmetric. Vastu emphasis on simetrical.

Perfectly uniform shapes like squares and rectangles produce high positive energies so long as they are not made up of negative material. The energy levels get amplified by use of positive materials. Many of the odd shapes produces negative energy level. The positive energy refers to the way the the sound and light are reflected, transmitted or absorbed by the materials.

To construct a new temple, first the direction of the temple going to face is determined, the length and breadth, the measurements of the *moolasthanam* and then the dimensions of the icon, the deity to be installed is determined. The Mariamman Temple has measurements, which are considered good as per Vaastu.

The ancient System of Iconography, very much like the western counterpart, was governed by a 'sacred' maths in which position, group, proportion, symmetry and number, were of extraordinary symbolic importance and were themselves an integral part of Iconography. Before a temple is constructed and an icon installed, the *aayaathi*, 'sacred' maths calculations must be carefully computed and observed to ensure the desired benefits accrue to the worshippers and society at large. The objective of *aayaathi* is to ensure that the blessings of God is conferred upon all. The calculation of *aayaathi* is also known as *aayaathi porutham* (measurement compatibility).

Vaastu is a combined study of science, art, astronomy, astrology, religion and mysticism, and also deals with the influence of climatic elements like temperature, pressure, wind velocity and direction, sunlight, humidity, radiation and other weather conditions, space, time, dynamics and man's place in nature. All these forces have a distinct effect on a building and its dwellers. Vastushastra strives at reaching a balance between the human beings and their environment.

The Hindu religion has features of philosophy, epic, mythology and rituals. Spiritual ideas and philosophical concepts are propagated through standard religious texts, mythological stories and symbols as an assimilable forms of religious preaching. The laymen will not question something religious but will question something scientific. People of ancient times did not have even the basic education to understand science. So a myth, symbol or faith, religious belief is used as mode of explanation by the sages.

The Vaastu without myths and religion can be considered Universal and can be used not only for Hindu Temple planning and construction but for other buildings as well.

The traditional materials are tested and approved as per Vaastu. Every material in the Universe radiates some energy at its own specific frequencies, today is said to be amenable to Kirlian photography. In Vastu, the materials collected for building a structure itself, involve the influx and interaction of a series of invisible forces that the time selected should be capable of screening off the destructive forces and calling into action the constructive ones.

In modern days the materials for a building are chosen according to the cost, availability, properties of the material, construction method and labour. Many composite materials are made to suit the climates and to achieve certain qualities. Reinforced concrete, glass and metal are a few of them. The latest or new technology in constructions and materials can be used as long as it does not affect the Vaastu.

1.1 Scope

The temples distributed around Malaysia are of the same manner so this study is set in Pulau Pinang and three temples are chosen for the case studies. The Hindu Temples in Malaysia can be divided to North Indian Style and South Indian Style. The case studies are of the South Indian Style Temples.

The existing Hindu Temples in Malaysia are of many scales; from icons under trees, a simple cubicle with zinc roof, roadside shrines to medium scale temples. The large temples are temple complexes with substructures which are normally found in India. The three temples chosen for the case study are of medium scale. The components of a medium size temple are the *pirakaaram* (perimeter wall), *moolasthanam* (sanctum), *artha mandapa* (ante sanctum), *vahana* (vehicle), *balipeedam* (a sacrificial altar), *dvajasthambam* (a flag post), *maha mandapam* (a great hall), *vimana* and *stupi* (the dome and pinnacle) and sometimes the *gopuram* (the entrance tower).

These three temples can be categorised under modern style. Modern style temples are any constructed temple of noticeable dimensions and are eclectic. The styles are borrowed indiscriminately from all the ancient styles and do not derive elegance. Refer Table 2.1.

Vaastushastra has a wide usage. The Vaastu principles can be applied to analyse not only temples or houses but also towns and cities, agricultural sites and farms, industries and factories, and other buildings. Mohenjo Daro and Harappa, the ancient civilisation of India are also said to be as per Vaastu by the Vaastu practitioners.

Vaastushastra discussed in this study is the art and science of Architecture and Sculpture of the Hindu Temple. Since in a temple the building and the sculptures cannot be separated, this study discusses the Vaastu in architectural context with very brief explanation where necessary on Iconography.

The basis of Vaastushastra makes the criteria for the case studies analysis. The criteria are The Site and The Temple Design. The analysis of The Site consists of The Sun Movement, The Slope and The Substructures. The Temple Design consists of Shapes and Proportion, Measurements, Materials, Construction Principles and Services. All these criteria are then compared among the three temples and with the ancient temple.

The planning and construction of a Hindu Temple will not be complete without the auspicious day and timing (*muhurta*) and the ceremony for the entrance of the site (*vaastupuja*). Other fields, which are of non-architectural matters but related to the Vastu are Astronomy, Astrology and Ritual Performances. Their correlation and their importance are explained briefly.

1.2 The Setting

Hindu Temples in Malaysia can be divided to North Indian Style and South Indian Style. Since there are more South Indian Style Temples, all three temples chosen for the case study are of South Indian origin.

Since there are no proper rules governing the temple construction and siting, a vast number of temples with different size, type and scale can be found in Pulau Pinang. A shrine can be as simple as an idol under a tree or an idol in a small three-walled cubicle with a zinc roof. Although some small shrines do have the components of a temple but the scale or to be specific the measurements are not according to Vaastu. Temples that use Vaastu are medium scale temple and large temple complexes with substructures.

The three temple chosen for this study are of medium scale. The components and substructures of a temple define the size. These three temples have the *pirakaaram* (perimeter wall), *moolasthanam* (sanctum), *artha mandapa* (ante sanctum), *vahana* (vehicle), *balipeedam* (a sacrificial altar), *dvajasthambam* (a flag post), *maha mandapa* (a great hall), *vimana* (the dome) and sometimes the *gopuram* (the entrance tower).

This study is done in in Pulau Pinang, “The Pearl of the Orient” is on the north – western coast of Peninsular Malaysia. The island covers about 285 km² and the Seberang Perai covers about 760 km². on the mainland. The population of Pulau Pinang is more than 1 million with Malays making up to 32%, the Chinese 59% and Indians 7%.

The Georgetown City on the island has a collection of fine old buildings of different influences and history.

	GeorgeTown	Other places in Pulau Pinang	Total in Pulau Pinang
Mosque	32	33	65
Chinese Temple	37	36	73
Hindu Temple	16	12	28
Sikh Temple	3	-	3
Christian Church	27	12	39

*Table 1.1: The number of religious buildings in Pulau Pinang.
(Laporan Pemeriksaan 1985, MPPP)*

According to the Table 1.1, there are;

- 1 Mosque for every 2500 Muslims,
- 1 Chinese Temple for every 3400 Buddhist/Taoist
- 1 Hindu Temple for every 1660 Hindus, and**
- 1 Church for every 1500 Christians.

Three temples in Pulau Pinang are chosen for the case study and they are;

1. The Maha Mariamman Temple, Queen Street, which is the oldest in Pulau Pinang,
2. The Ayira Vaisyar Sundaresvarar Temple, Jalan Kebun Bunga, a recently constructed temple, and
3. Sri Aruloli Thirumurugan Temple, Penang Hill, which is under renovation.

1.2 Methodology

A Study on Hindu Temple Planning, Construction and The Vaastu, is developed through a critical and innovative problem reviewing. The study is to analyse the relevance of Vaastu in building a Hindu Temple. To reveal that Vaastu is Science of Building Technology and is Universal. New Technologies can be incorporated to have a better-designed Hindu Temples. The scope and the setting of the research are determined and the Primary Data and Secondary Data are accumulated through various sources.

The research idea for this study is the case studies of three Hindu Temples in Pulau Pinang; The Maha Mariamman Temple, Queen Street, The Ayira Vaisyar Sundaresvarar Temple, Jalan Kebun Bunga, and Sri Aruloli Thirumurugan Temple, Penang Hill. The case studies data can be reviewed as a Primary Data.

The case study is done by analysing each of the temples with the ancient Indian set of rules and regulation to temple building, the Vaastu. Since the Vaastu consists of various scopes, only The Site and The Temple Design of Hindu Temples are analysed in The Case Studies. The analysis of The Site consists of The Sun Movement, The Slope and The Substructures. The Temple Design consists of Shapes and Proportion, Measurements, Materials, Construction Principles and Services. All these criteria are then compared among the three temples and with the ancient temple.

Other Primary Data consists of the interviews with all the three temple's priests, temple officials and some devotees. The sthapati and workers in The Thirumurugan Temple were able to give elaborate explanations on the design and materials in the conventional method of construction. Internally published Kumbhabhisegam magazines, brochures were able to reveal the historical background of each temple. Data regarding temple in Pulau Pinang were accumulated through the interviews with the MPPP officials and their publications.

The Secondary Data are accumulated through browsing various publications related to Vaastu; articles, newspapers, brochures, magazines, books, other related dissertations, websites and e-groups.

The analysis and the results are concluded and recommendations were made for future studies. Refer Figure 1.1 for the Methodology Chart.

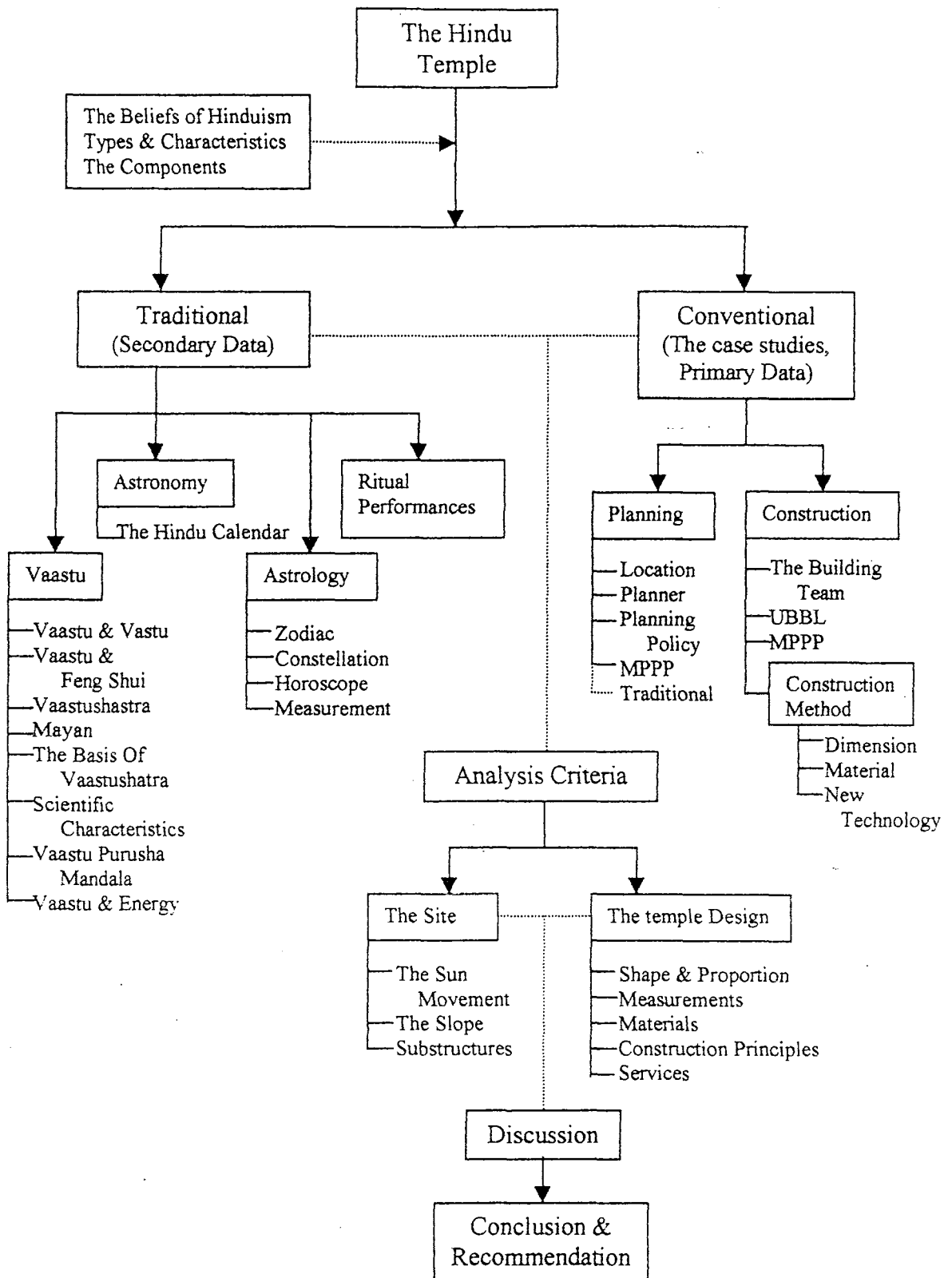


Fig. 1.1: Methodology chart.

1.3 Objective

This study is to analyse the relevance of Vaastu in building a Hindu Temple. Vaastu is the energy and the embodied energy. In Vaastushastra vibration, waves, sound and light are the active parameters in this science. Qualities are classified, based on orientation, directions and energy resources.

Vaastu is a design principle or order that has been tried and tested by the builders or *sthapathis*. It also can be said as Building Technology. This study is also to reveal that Vaastu is Science of ancient Building Technology, which is very similar to the modern context.

This study is to reveal that the Vaastu is Universal. The Vaastu without the mysticism and philosophy is not only for temple construction but can be used for other buildings as well because this knowledge can be adapted to modern context.

This study is to reveal the constraints of latest technology in the Vaastu or in planning and construction of the Hindu Temple. The understanding of Vaastu can be incorporated with new technologies to have a better-designed Hindu Temples. Latest technology in material and construction can be incorporated in the temple building as long as it does not bring ill effect to the building.



2.3 THE HINDU TEMPLE

2.0 The Hindu Temple

The word Temple is derived from the Latin word '*templum*', which in its original sense would mean a square or rectangular place made out by the augur for the purpose of His observations. An extended sense gave it the meaning of a consecrated place. (Sairam, 1982)

The Hindu temple is a place consecrated for and dedicated to the worship of God or Gods. Hindus revere their temples as sacred , magical places in which the three worlds (*triloka*) most conciously commune – structures especially built and consecrated to channel the subtle spiritual energies of inner-world beings. The temples physic atmosphere is maintained through regular worship ceremonies (*puja*), invoking the Deity (icon) as temporary body to bless those living on the earth. In Hindusm, the temple is the hub of virtually all aspects of social and religious life.

The Hindu Temple definitions by Arjun Appadurai (1983) suggest that South Indian Temple should fulfil the following requirements;

- As a place, or a sacred space, the temple is an architectural entity that provides a royal abode for the deity enshrined in it, who is conceived as a pragmatic sovereign;

- As a process, the temple has redistributive role, which ... consists of a continuous flow of transactions between the worshipers and deity, in which resources and services are given to the deity and a returned by the deity to the worshippers in the form of 'shares', demarcated by the certain kinds of honours.
- As a ... system of symbols, (it) serves to dramatise and define certain key South Indian ideas concerning authority, exchange (or interaction), and worship at the same time that it provides an arena in which social relations in the broader social context can be tested, contested, and refined.

Thus he stresses that, The Hindu Temple is a royal abode, a specific sort of redistributive process, and a powerfully reflexive symbolic system.

The Hindu Temple is a symbol of the Hindu religion. Symbols effectively employed for communication with common man who otherwise had no access to the great, intellectual treaties on ethics, philosophy or metaphysics.

The *gopuram* symbolises the Mount Meru which the Gods lived and the *vimana* symbolises that a man should pass over envelopes of desires, sufferings and joys to elevate himself to *moksha*, the supreme degree of knowledge. The clock wise perambulation of the *moolasthanam* depicts the perambulation of the entire Universe itself. This also is similar to the motion planets revolving around the sun in the Solar System and also the electrons revolving around a nucleus in an atom.

2.1 The Beliefs of Hinduism

Any religious art form, the Hindu Temple being no exception, has its foundation on both faith as well as aesthetic notions of the population. When the religious faith finds its expression in an aesthetically pleasing manner, a religious art is born.

In India, any traditional art form depicts a religious background without which perhaps it could not have withstood the torrents of time. The faith being permanent and the aesthetic values highly volatile and fluid in a Hindu Temple explains the importance of it.

There are nine beliefs, which offer a simple summary of Hindu spirituality. Satguru Sivaya Subramaniaswami (1993) in *Dancing with Siva* explains it as;

1. Hindus believe in the divinity of the Vedas, the world's most ancient scripture, and venerate the *Agamas* as equally revealed. These primordial hymns are God's word and the bedrock of *Sanatana Dharma*, the eternal religion which has neither beginning nor end.
2. Hindus believe in a one, all-pervasive Supreme Being who is both immanent and transcendent, both creator and Unmanifest Reality.
3. Hindus believe that the universe undergoes endless cycles of creation, preservation and dissolution.

4. Hindus believe in *karma*, the law of cause and effect by which each individual creates his own destiny by his thoughts, words and deeds.
5. Hindus believe that the soul reincarnates , evolving through many births until all *karmas* have been resolved, and *moksha*, spiritual knowledge and liberation from the cycle of rebirth, is attained. Not a single soul will be eternally deprived of this destiny.
6. Hindus believe that divine beings exist in unseen worlds and that the temple worship, rituals, sacraments as well as personal devotionals create a communion with these devas and Gods.
7. Hindus believe that a spiritually awakened master, or satguru, is essential to know the Transcendent Absolute, as are personal discipline, good conduct, purification, pilgrimage, self-inquiry and meditation.
8. Hindus believe that all life is sacred, to be loved and revered, and therefore practice *ahimsa*, non-injury.
9. Hindus believe that no particular religion teaches the only way to salvation above all others, but that all genuine religious paths are facets of God's Pure Love and Light, deserving tolerance and understanding.

A Hindu's life is always concentrated in religious practice. Everything and anything a person does is connected to god. The reason is to attain *moksha*. The Hindu temple is considered the abode of god as said above it is the place to create a communion with god. A Hindu considers the temple as the representation of the divine form (symbol), that is an important social institution and an integral part of society.

The Hindu Temple originally conceived as embodiment of faith to serve the religious and spiritual needs of the community came to be associated with various social, cultural and economic activities as well.

The Hindu Temple in modern days serves also as a venue for social activities like charitable events and cultural activities like classes for traditional dance and music. The Hindu Temple employs workers, masons, artisans, artist, engineer, priests, scholars, teachers and other people for maintenance. Thus providing economic activities.

2.2 Types of Hindu Temple and its Characteristics

Basically Hindu Temples can be divided to North Indian Style and South Indian Style. Malaysia has more South Indian Style Temples and all three temples chosen for the case study are of South Indian origin as explained in The Setting. All the temple architecture of South India can be divided into six distinct periods as in Table 2.1.

The Hindu Temple evolved from simple building to a huge complex and then to simple shrines again. The early ancient temples are caves temples or rock cut then they constructed temples. The Simplest form of temple in Sanchi during Gupta Period consists of *moolasthanam* with an attached pillared porch and a flat and simple roof, which evolved from the rock-cut temple.

When kings are deeply involved in religious matters, they started building temples in a larger scale. The king, Raja - Raja Cholan's temples became the prototype for the Hindu Temples. Under the royal patronage during the Vijayanagar and Post-Vijayanagar periods the Hindu Temple became a huge complex (with various substructures; sub-temples, tanks and service structures like kitchen and lodging).

During the modern period, when the British annexed the king's authorities, depriving the Hindu Temple of its royal patronage. This activated the construction of shrines, personal lineage temples and clan temples.

Style	Periods	Characteristics	Example
Pallava	AD 600 - 850	Rock cut	Mahabalipuram rock cut temples
Early Chola	AD 850-1150	Immense vimana (190 feet), miniature gopuram.	The great vimanas of Tanjore and Gangaikondapuram
Later Chola	AD 1150-1350	Miniature gopuram Immense and grand gopuram	Kailasanatha at Kanchipuram The gopuras of Chidambaram and Jambukeswaram.
Vijayanagar	AD 1350-1600	Immense and grand gopuram. Mandapa for resting and monolithic pillars with sculptured horses, roaring lions, gods and goddesses.	Kalayana Mandapa of Hampi, Kanchipuram and Vellore, and Mandapas of Lepakshi.
Post Vijayanagar	AD 1600-1900	Semi-modern style. Corridors	Rameswaran at Madura.
Modern	AD 1900 and later	Mixed style	The Penang Hill Thirumurugan Temple The Mahamariamman Temple, Queen Street. The Ayira Vaisyar Sundaesvarar Temple

Table 2.1: The Style and Characteristics of South Indian Hindu Temples.

Malaysian South Indian Temples can be categorised under modern style. Modern style temples are actually any temple construction of noticeable dimensions and are eclectic. The styles are borrowed indiscriminately from all the ancient styles and do not derive elegance.

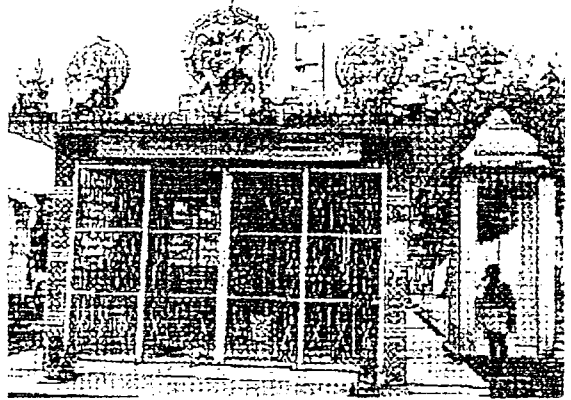
Dr. K. Ramanathan, (1995) in his thesis, *Hindu Religion in an Islamic State: The Case of Malaysia*, categorises Modern Hindu Temples according to the management and rituals of worship;

- Ethnicity; Chettiar, Ceylonese Tamil, Patthar, Chitties
- Personal Lineage Temples
- Public Owned and Managed Temples
- Penang Hindu Endowments Board Temples- Government Labour-line Temples
- Plantation Temples
- Orphan Temples

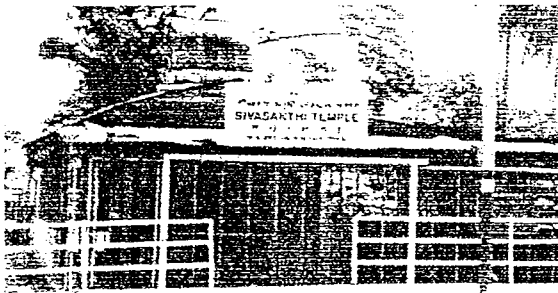
In Malaysian context the Hindu Temple building does not have any proper rules and regulations. The statistics in Table 1.1 shows that every 1660 Hindus there are 1 Hindu Temple. Provision for religious buildings should be made in the early planning of a town. There should be a rule to govern the orphan temples, small shrines and icons under a tree.



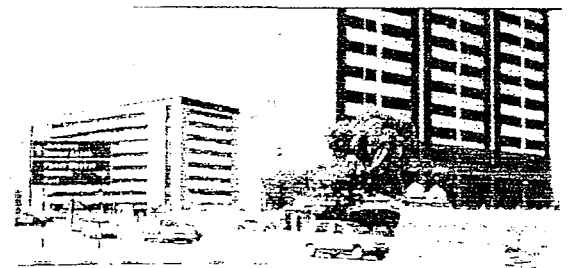
C.P. 1.1: Orphan temple, an idol under a tree. (Ramanathan, 1998)



C.P. 1.2: The Ambal Temple in Jalan York Close, P. Pinang. (Ramanathan, 1998)



C.P. 1.3: The Sivasakthi Temple, Jalan Ayer Itam, P. Pinang.



C.P. 1.4: The two shrines against the town background along Jalan Jelutong, P. Pinang.



C.P. 1.5: One of the shrine, Jalan Jelutong, P. Pinang.



C.P. 1.6: Another shrine, the Murugan Temple, Jalan Jelutong, P. Pinang.

These suggestions are not made to deter religious practices but to prevent the demolition of these shrines to make way for future developments and to have a quality temple rather than temples in quantities.

According to the 'Dasar-Dasar dan Garis Panduan MPPP, 1999', for a local development the provision for religious purpose should be as below;

- Non - Muslims – 500 m² for 5000 people,
- Muslims (surau) – 250 m² for 5000 people, and
- Religious Buildings – (0.4 – 0.5) acres for a city

And the building itself must comply with the Uniform Building By Law.

These are the only rules that govern the religious building in Pulau Pinang. A detailed and more specific rules and regulations should be imposed. Not necessarily by the local authority alone, but with the collaboration of a religious committee or as the advisory board to maintain qualities of religious buildings.