CHAPTER - III

INTRODUCTION TO KĒRA ṬA TEMPLE ARCHITECTURE

3.1 Architecture:

The term ‘architecture’ is derived from Latin ‘architectura’ and that in turn is acquired from Greek ‘architekton’ meaning ‘chief craftsman’ or ‘master builder’. It is the art and the technique of building employed to fulfill the practical and expressive requirements of civilized people. Architecture, with all its varying phases and complex developments, must have had a simple origin in the primitive efforts of mankind to provide protection from weather, wild beasts and other threats for human. The history of architecture is a record of continuous evolution, beginning with the simple and constantly repeating forms to highly developed complex buildings. The tree of architecture represents the evolution are the growth due to the six influences-geographical, geological, climatic, religious, social and historical-from earliest times to the present day. Architecture was evolved, moulded and adapted to meet the changing needs of humans. A glance along the perspective of past ages reveals architecture as a lithic history of social condition, progress and of events which are landmarks in the history of mankind. The genius of a nation is unmistakably stamped on its architectural monuments.¹
The characteristics that distinguish a work of architecture are:

- Its suitability to use by human beings in general and its adaptability to particular human activities
- The stability to particular human activities
- Its communication of experience and ideas through form.

All these above conditions must be met in architecture. The second criteria are constant, first and third criteria’s vary according to the social function of the building. If the function is chiefly utilitarian, as in a factory, communication is of less importance. If it is chiefly expressive as in a monument utility is a minor concern. In edifices such as temples and educational institutions, utility and communication may be of equal importance.

Indian architecture has a religious origin as well as religious character. The pre-eminence given to devotional architecture in India is characteristic of Indian culture.

3.2 Evolution of temple Architecture in Kēraḷa:

The early inhabitants followed worship of nature, ancestor, spirits etc. Among these the ‘Kāvu’ or the sacred groves deserve special attention. The Kāvu is a grove providing habitat to a variety of fauna and flora. In this grove a small raised platform with stone idols was placed. The idols were either without
any form or in the shape of serpent hood. These hypaethral temples had trees, stone symbols of Mother Goddess or other naturalistic or animistic images as objects of worship. Offerings of milk and food are made in this Nāga worship platform. No rituals or pūjas are performed here, only a lamp is lit in the evening. As the grove is considered sacred and nature is revered primarily, no trees are cut from a Kāvu and no animals, especially snakes were killed. The Kāvus are the undisturbed natural habitat protecting biodiversity. These Kāvus, without any structure, were the early centres of religion where the nature was the object and force of worship. Origin of Kāvus cannot be traced, but in tradition, it dates to earliest inhabitation of man in the land itself. These Kāvus exist even today. Over time when structural temples took the main stage of worship, the Kāvus were incorporated into that, usually placing the Nāgarāja as a subsidiary deity. But in such case the Kāvu did not remain a grove or forest anymore. The term Kāvu has also been used to denote temples dedicated to Lord Śāsta, Ayyappa, Kāli and Kurumba in the subsequent periods. The word ‘Kavu’ also denotes sacrifice, which was part of worship performed there.

There also existed other rude forms of worship, predominantly invoking spirit, good or evil. Kāli, Nīli, Kōta, Kurumba, Cakki, Oṛamulacci and Oṛappaḷḷi, Cāttan etc. were some of the deities worshipped by the indigenous Keralites before the introduction of Āgamic deities. Offerings of food, intoxicant drinks and bloody animal sacrifices were involved in their worship. There were
no professional priests or exclusive temple structure involved in this kind of worship. Elder laymen of the community turned to be the so called temporary priest and coordinated the worship. It should be noted that the worship took place either in a Kāvu or in a specified place with the platform and images within the compound of the residential area, and also, there were no daily worship and ritual, except lighting the lamp. The sacrifices and rituals took place only annually. Laymen turned into oracle on the occasion also were revered as the God and formed an integral part of their religion and worship.

There are epigraphic references on Buddhist Vihāras and Caityas and Jain worship centers. However, structural evidences *in situ* have not been found. Many sculptures belonging to Buddhist and Jaina religion has been found from different parts of Kēraḷa. It is difficult to find solid example for the structural activity relating to these religions.

In Kēraḷa many rock cut temples were built during the period prior to 8th century AD. These cave temples on hard granite medium could have drawn inspiration from the Tamil country. The Buddhist and Jain traditions prevalent elsewhere in India also could have been the factor behind these cave temples. But the Kēraḷa examples are modest and simple in comparison to the Buddhist and Jain rock cut caves from the mainland. The rock-cut temple activity has a distribution from Tiruvananthapuram in south to Palakkad in north. These are distributed in two zones of concentration, the northern group occupying the Cēra
country and the southern group located in the ancient Āy territory. But the geographical location in the respective territories has no authorship on the caves. The southern group consists of Tirunandikhara, Vizhinjam, Ayirurpara, Kottukal, Kaviyur and the northern group consists of Irunnilamkode, Trikkur and Bhrantanpana. The one at Kallil and Tiruvanjikkuzhi are temples functioning in natural caves and not rock-cut. All the rock-cut temples of southern group are single-celled shrines and display Pallava affinities. Those in the northern group are all shrines dedicated to Lord Śiva. Among these Trikkur and Irunnilamkode are in Trissur district and Bhrantanpara in the Palakkad district. The details of those from Trissur and Ernakulam are discussed in detail in the following chapters. The beginning of structural temple in Kēraḷa has to be dated to the first quarter of the 9th century AD when Kulaśēkhara Varman and Rājaśēkhara Varman were on the Cēra throne. Sthānu Ravi’s inscription from Kūṭalmāṇikkam Bharata temple, dated 855 AD is the earliest temple inscription. Earliest sculptures are also datable to the same period. These sculptures could have been an inseparable part of a shrine. Hence, a date of c. 800 AD may be taken as terminus de quem of the Brhmanical Temple architecture of Kerala.

By 8th century AD structural temples were built in Kēraḷa. The possibility of structures built with perishable material prior to this period cannot be ruled out. Literature prior to 8th century AD mentions architecture and painting. Unfortunately, these did not survive to the present day. The earliest known
structural temples in Kērala rose at the time of Kulaśēkhara Varman and Rājaśēkhara Varman of later Cēras in the first quarter of the 9th century AD. Inscriptions of the period use terms as ‘Taḷi’, ‘Mukkāḷvaṭṭam’ and ‘Kōyil’ to denote temple. Inscriptional evidences show that the Mahādēva temple at Tiruvanjikkulam near Kodungallur, Ṭṛkkulaśēkharapuram Kṛṣṇa Temple, Kūṭālmāṇikkam Bharata temple at Inajalakkuda were some of the temples emerged during the period. A rapid growth in temple building movement can be seen at this stage.

The belief system of the temples was Āgamic and hence, it was constructed according to the rules laid down in Vāstu Śāstras. In Kērala this structural temples have passed through three developmental stages, marking changes, additions and modifications in structure and its concept. The developmental stages of Kērala temples have been classified as Early phase (800-1000 AD), Middle Phase (1001-1300 AD) and Late phase (1301-1800 AD) by H Sarkar in his monumental work ‘Architectural Survey of Temples of Kerala (1978)’. The classification by him is appropriate, authentic and widely accepted. Hence, same classification and dating are followed in the present research. The following are three phases of temple architecture according to H. Sarkar.

- **Early Phase (800-1000 AD):** The early phase of temple architecture is represented by temples built on circular, square and apsidal ground plans. Oblong or rectangular structures were built.
exclusively for consecration of Saptamāṭrs (Saptamāṭrkkal). There also existed certain hypaethral temples, generally dedicated to mother goddess. Other major deities worshipped in this phase were Viṣṇu, Śiva, Kṛṣṇa and Śāsta. Both sāndhāra and nirandhāra temples were built following the traditional models. Many temples in this phase have four functional doors, conforming to the sarvṭōbhadra type. Walls were decorated with projections and recesses and false niches. Among the temples of this period the Kṛṣṇa temple at Tṛkkulaśēkharapuram contains dēvakōṣṭas with images. Namaskāra maṇḍapa was not a popular component in the early phase. The temples of early phase had a well built śrīkōvil (centeral structure containing sanctum sanctorum) with or without a detached namaskāra maṇḍapa and nālambalam. Certain square shrines in the period had a projecting mukha maṇṭapam in front of the śrīkōvil. But in the circular and apsidal shrines there was no projected maṇḍapam, instead the space in front of garbhagṛha within the śrīkōvil functioned as the mukha maṇḍapam. Thus the temples of Kērala from the very beginning lack the conception of a well defined antarāḷa or ardha - maṇḍapa. The Cērās, and Mūṣikas were the chief patrons of the temple building during in this phase.
Middle phase (1001 – 1300 AD): This phase reveals many developments in interior arrangement. Temples were built on square, circular apsidal and rectangular plans. The introduction of the elliptical plan is visible in the ruined shrine at Mahādēva temple at Chengannur. Many temples in this phase reveal a fusion of Drāvida and Kēraḷa-Drāvida style. A miniature Drāvida vimāna was build around the garbhagṛha and this vimāna was contained inside Kēraḷa style śrīkōvil. But the interior features are not discernible from outside. In certain temples one comes across more than one circumambulatory path around the garbhagṛha.

Sarvatōbhadra type temples continued to be built. But temples with two or three doors and with one and two ghanadvāras respectively were also built in this phase. Consecration of the consort of presiding deity at the back of the garbhagṛha is seen increasingly during this middle phase.

A detached namaskāra-maṇḍapa remained as an occasional negligible component at this stage of development also. Placing of bhūta figure supporting the pranālā and carvings on the hasti-hasta banisters were other additions of the middle phase.

Late phase (1301 – 1800 AD): Large numbers of temples belong to this phase though structurally many of them owed their inception to earlier period. The elaboration of the temple complex is the
notable development of the time. The construction of namaskāra-
manḍapa as a rule and construction of Balikkalpura or Agra-
manḍapa were the prominent additions in this phase. In the bigger
temple complexes another large edifice called kūttambalam was
also constructed. This was hall meant for dance-drama performance
and other recitals. The kūttambalams were constructed outside the
nālambalam, in the bāhya hāra, usually on the right side to the
deity. The construction of mahādvāra with massive gōpuram were
also given due consideration by the builders of late phase.

In the ground plan, circular, square, apsidal and rectangular
shrines continued to be built. The addition is the fully developed
elliptical shrine. But there exist only one example of elliptical
structure (Mahādēva temple at Vaikom in Kottayam district).

A number of small apsidal shrines dedicated to lord
Ayyappa or to Lord Śāsta as an upadēvata usually built in the
bāhya hāra came up in bigger complexes.

Covering of the śrīkōvils’ roof with copper sheets was
another innovation of this period. The adhiṣṭāna remains as simple
as before except in few cases. The concept of multi shrines
received wide currency during the late phase. This was the
reflection of socio-religious developments in society. The great
impetus was provided by Bhakti movement and its propagators.
We come across temples with two and three śrīkōvils dedicated to deities from different sects like Viṣṇu, Śiva, Bhagavati etc within the same curṟambalam, and Śāsta and Ayyappa shrines were started to be built outside the curṟambalam. These show the changes in the appeal of the deities and also indirectly points to certain changes in the socio-religious equations.

3.3 Introduction to Kēraḷa Temple Architecture

The temples of Kēraḷa form an essential and integral part of Drāviḍa architecture. It displays certain variation on plan and elevation from its counterparts on the eastern cost of south India. These variations are mainly owing to distinct climatic conditions and the employment of different building materials along with the native systems of beliefs and culture. Original character and underlying principles of architecture of Kerala are same with Drāviḍa style. The distribution of the Kēraḷa idiom of Drāviḍa architecture is from Thiruvananthpuram in south to the Tulu speaking regions of south Karnataka on the west coast of south India. Here the Drāviḍa style is modified with added features to suit native environment and needs.

Scholar like Stella Kramrisch calls the architecture of Kēraḷa temples as ‘Kēraḷa Style’. But another scholar, H. Sarkar is of the view that the Kēraḷa architecture is fundamentally a regional variation of the Drāviḍa order, mainly caused by various geographical factors like the high rain fall, availability of
laterite formation and dense jungles. He refuses the identity of Kēvala architecture as distinct from Drāviḍa. According to him, the Kēvala variation is earmarked by sloping roofs, profuse use of laterite in the wall construction and timber in super structure, the high incidence of circular shrine and the unique interior arrangement⁹.

3.4 Ground Plan

Vastu is primarily the planned site of the building. Its shape is square as a rule and its full name is vatsu purusha mandala. This name consists of three parts, Vatsu, Purusha and Mandala. Though the shape of Vatsumandala is essentially square, it can be converted into triangle; hexagon, octagon, and circle of equal area and retain its symbolism. There is an intrinsic relation among the vatsupurshamandala with the site plan, ground plan and vertical section of any building. The general form of the temple rests on the vatsupurushamandala.

Square is the fundamental and perfect form of Indian architecture. It presupposes the circle and results from it. Square and circle coordinated in Indian architecture from fire altar. Square as fundamental figure of sacrificial symbolism and temple architecture lends itself to many variations. Thus various types of vatsumandala are enumerated, starting from Single Square to 64 equal division of the square. The perfect status ascribed to the square shape in Indian architectural symbolism makes the circle less significance. However, in Kerala temple architecture circle and square plans are employed with equal significance.
The Kērala temples are built on plans varying from square, circular, apsidal and few in elliptical and octagonal. The employment of circular plan in abundance is unique about Kērala. A developed Kerala temple consists of five enclosures (pañca-prākāra). They are:

A. Antar-Maṇḍalam / Akatte Balivaṭṭam
B. Anta hāra / Cuṟṟambalam / Nālambalam
C. Madhya hāra
D. Bāhya hāra
E. Maryāda¹⁰ (Fig. 3.1) (Pl.3.1)

A. Antar-maṇḍalam: This is the innermost prākāra of the temple. The constituent parts of antar-maṇḍalam are śrīkōvil, namaskāra-maṇḍapa, well and Kokkaraṇi.

- Śrīkōvil: Śrīkōvil is the nucleus of the temple. It stands in the center of inner courtyard. This courtyard is always four sided. Śrīkōvil consists in itself the garbhagṛha in the center, a passage around the garbhagṛha for the circumambulation (pradakṣiṇa patha) and intermediary chamber (antarāla) connecting the ambulatory path with the projecting mukha-maṇḍapa in the front. The pradakṣiṇa patha, antarāla and mukha-maṇḍapa are optional components and built depending upon the choice of the builder. From the early phase itself, temples with inner pradakṣiṇa patha
(Sandhara) and without inner pradakṣiṇa patha (Nirandhara) are built in Kēraḷa.

The plan of Śṛṅṅ्कōvil varied and was built on square, circular, apsidal or elliptical plan (pl.3.2, 3.3, 3.4). In sandhara structure, the ambulatory was created between the inner and outer walls. In most cases the garbhagṛha is square, even when the enclosing śṛṅṅ्कōvil is circular. In certain examples the garbhagṛha is also circular, and in certain others the inner walls is square outside and transformed into a circular inside. Vary common is the type of śṛṅṅ्कōvils with circular śṛṅṅ्कōvil enclosing circular garbhagṛha having square interior (fig. 3.7). Śṛṅṅ्कōvil built on apsidal plan often have apsidal or square garbhagṛha.

The intermediary chamber is rare in Kēraḷa temples. The projecting mukha-maṇḍapa is always narrower than the sanctum proper. This two unit division of śṛṅṅ्कōvil is not followed as a rule, but has more occurrences in the square plan (fig. 3.5). In case of the circular and apsidal śṛṅṅ्कōvils, the divisions are only interior and it is not discernible from outside. The arrangement of double ambulatory around the garbhagṛha is a development from 11th century onwards. Columns are also arranged around the śṛṅṅ्कōvil.

Around the śṛṅṅ्कōvil is the arrangement of balipīṭhas on the orients and cardinal points form a square. These balipīṭhas on the
inner court yard represent āṣṭa-dikpālas and other divinities. Among them on the southern side, is a panel of balipīṭhas representing Saptamāṭṛkas with Ganapati and Bhairava.

- **Namaskāra-maṇḍapa:** Namaskāra-maṇḍapa is also called as archana-maṇḍapa. This is a detached pillared hall built axially in front of the śrīkōvil (pl. 3.5). As a rule namaskāra-maṇḍapa is built on square plan. Though the maṇḍapa is not an essential feature and not seen in early temples, it forms part of all important temples from 11th century onwards.

- **Well and Kokkaraṇi:** a well is commonly seen in temples for exclusive purpose of drawing water for temple rites. In some of the temples, instead of well a small rectangular or apsidal tank with number of steps called Kokkaraṇi are built for the same purpose.

B. **Anta hāra:** The enclosing structure on the four sides of the inner courtyard forms the second prākāra of the temple called Anta hāra (pl. 3.7). In the regional language it is called as Curṇambalam and Nāḷambalam. Fundamentally, the anta hāra, is a colonnade. It also consists of many functional chambers like tiṭṭappaḷḷi (kitchen for shrine), muḷayaṇa (chamber for ritual germination of pulses and cereals), store room and, at times, sub shrines also. As the court yard is four sided, the Anta hāra is always four sided colonnade.
• **Valiyambalam:** The Antahāra has wider dimension on the front i.e. on both side of main entrance. It consists of walkways at ground level flanked by raised floor areas with colonnades. Sometimes, the wooden ceiling above the walkway repeats the carved brackets, friezes and panels of the namaskāra-manṭapa. Its broad space is used for conducting hōmas and other sacrificial and ritual performances.

• **Muḷayara:** This is a chamber usually placed on the north or north east in the antahāra. During utsava bali, specified cereals and pulses are germinated here after tantric rites relating to deity.

• **Tiṭappalli:** This chamber is located at the south-east in the antahāra. All the cooking for the deity is done here and only approved priests are allowed to enter and prepare Naivedya (Offerings).

  The antahāra is intersected with doors providing entrance to antar-manḍalam from bāhya hāra. The number of entrances could vary from one to five.

C. **Madhya hāra:** It is the third enclosure built closely around the outer wall of anta hāra, separated by a narrow space in between (pl. 3.8). The wall of madhya hāra is attached with structure of poles affixed with of lamps on it. These lamps are sheltered by tiled roofs running continuously from one
corner of the complex to the other (pl.3.9). They are punctuated by gables at the corners and axial entrances.

D. Bāhya Hāra: The courtyard around the Madhya hāra with various structures constituted bāhya hāra. It comprises agra-mañḍapa, valiya balikal, outer balikal, Kṣētra pāla, dhvajastambha, dīpastambha, kūttambalam and shrines of subsidiary deities.

- **Agra-mañḍapa:** This is a portico attached to main entrance to the valiyambalam. It is also called as balikalpura. This small portico is always four sided on plan (pl.3.10). Usually the principle balipīṭha (valiya balikal) is installed inside this portico.

- **Valiya balikal:** Valiya balikkal is axially placed in front of the main deity on the bāhya hāra, either within the agra-mañḍapa or outside. This balipīṭha has various components like miniature adhiśṭhāna, wall, the parapet and the lotus motif on the top (pl.3.11). The pīṭha is a miniature and symbolic representation of the actual vimāna (śrīkōvil) inside.

- **Outer balipīṭhas:** on the bāhya hāra small balipīṭhas are installed at cardinal points representing the gaṇa dēvatas of the principle deities of the temple. This balipīṭhas are arranged in such a way to form a boarder and the outer ambulatory path is beyond this boarder (pl. 3.15). The balipīṭha representing
kṣētrapāla is poisoned outside the ambulatory path on the north-east corner. Kṣētrapāla is the guardian of temple.

- **Dhvajastambha (flag post):** This is axially erected to the entrance of the temple. During festivals, flag is hoisted on this post as a ritual. This post is believed to have great symbolic significance and worship of dhvaja is itself considered equal to the worship of main idol. The mount of the presiding deity (Vāhana) is placed on the top of this post. Usually wood is the material used for its making. An outer covering with copper is made for protection of the wood (pl.3.12).

- **Dīpastambha:** It is a multi layered lamp made of stone or metal, placed axially next to Dhvajastambha (pl. 3.13).

- **Sub Shrines:** Besides the principle deity, worship is offered to sub deities or upadēvatas also. These deities are consecrated on different parts of bāhya hāra as small sub shrines. Certain principles are followed in respect to the position and facing direction of the sub shrines.

- **Kūttambalam:** It is the theatre for performing arts. Kūttambalam is always built on the bāhya hāra, outside the ambulatory path on the right corner. It has three main parts –
aṇiyāra (green room), rangam (stage) and mṛdanga pada, where drums are kept.

E. **Maryāda:** Maryāda forms the fifth and the outer most prākāra of Kēraḷa temples. It consists of the compound wall with gōpura and Ūṭṭupura.

- **Gōpura:** Gōpura was also called as Mahādvāra (pl. 3.16). It is the gateway built intersecting compound wall. The most imposing Gōpura is built on the facing direction of principle deity and on other sides these are small and simple.

- **Ūṭṭupura:** Ūṭṭupura is dining hall, usually built as part of the maryāda. This is always attached with kitchen called agra śāla. Formerly it was used for feeding Brahmins only and later on devotees of all classes are fed here on festival occasion. Temple tank is also built attached outside the compound wall.

On plan, a Kēraḷa temple is always consisted in a rectangular area, in the heart of which the shrine proper is consecrated with surrounding allied structures. Generally, the plan and arrangement of anta hāra, madhya hāra and bāhya hāra are uniform, except in multi-shrine temples, where more than one śrīkōvil is built facing different directions. The character and identity of a temple is determined by architecture of its śrīkōvil. Śrīkōvil is the nucleus of temple complex.
3.5 Elevation:

The principles of Drāviḍa architecture are laid out in texts such as Śaiva Āgamas (in its Kriyāpāda sections), Vaiṣṇava Pañcaratra works (eg. Atri Samhita and Vaikhānasāgama of Marīci and Kaśyapa), the Mayamatam, Śilpratnam, Amśubhēda of Kaśyapa, Viśvakarma Śilpa, Viśvakarma Vāstu Śāstra, the Diptatantra, Mānasāra, Śilpasamgraha, Tantrasamuccaya and Iśana Śiva Gurudēva Paddhati. According to various texts Drāviḍa temple is characterized by an octagonal superstructure. Different texts vary on opinion regarding which part of the vimāna is octagonal. According to Svāyambhūvāgama, Ajita Āgama, Suprabhēda Āgama, Marīci Samhita, Iśana Śiva Gurudēva Paddhati and Kaṭkabhūṣaṇa, a vimāna which is octagonal from grīva and above is Drāviḍa. Texts like Karṇāgama and Diptāgama finds the octagonal shape form the vēdi upwards. Kāmikāgama, Pādma-samhita and Mayamatam include hexagonal and oblong along with octagonal as shapes of Drāviḍa vimāna.11

According to Kāmikāgama an ēka-bhūmi Drāviḍa vimāna has six component parts (aṅga) on its elevation. It is called Śaḍāṅgavimāna. The six aṅgas from the bottom are Adhiśṭhāna (styolobate/plinth), Pādam (pilastered wall), Prastara (entablature), Grīva (neck), Śikhara (Cupola) and the Stūpi (pinnacle) (fig. 3.3). The top three components constitute superstructure of the vimana.12
Kerala temple structure, even though falls within the Drāviḍa style, displays marked variations on its elevation (fig. 3.2). The ēkatala vimāna of Kēraḷa irrespective of its plan cannot be exactly identified with Śaḍvarga jāti, ēkabhūmi vimāna of pure Drāviḍa style. It is difficult to differentiate the six aṅgas. Adhiṣṭhāna and pāda are clearly distinguishable. An ēkatala vimāna of Kēraḷa idiom has adhiṣṭhāna and pāda identical with pure Drāviḍa style but the part above starting from prastara has clearly unique form. The details of Kēraḷa temple’s elevation are as follows.

- **Adhiṣṭhāna**: the moulded base of Drāviḍa temple is called adhiṣṭhāna (stylobate/socle).

  Adhiṣṭhāna of Kēraḷa temple śrīkōvils share the same features and mouldings as those of usual Drāviḍa tradition (pl.3.17). Both prati-bandha and pāda-bandha adhiṣṭhāna are built in Kēraḷa. According to the H. Sarkar adhiṣṭhāna of Kēraḷa style can be classified into two. One, those with highly recessed mouldings (kampa) above the kumuda and the other variety in which a kapōta or Paṭṭika moulding is the crowning element and has recession only in the middle part\(^\text{13}\). Principle moldings of the adhiṣṭhāna are upāna (Pādukam), Jagati, Kumuda, Gaḷa and Paṭi. Paṭi is the topmost moulding placed on the floor level of the śrīkōvil. Kampa, Vājana motifs and Kapōta are optional features of the adhiṣṭhāna. Padmōpāna or padma pāduka as the bottom most member of the adhiṣṭhāna is commonly seen in Kēraḷa.
Employment of upapīṭha below the adhiṣṭhāna to raise height was less popular among Kēraḷa temple builders. Having kapōta moulding above the gaṇa (kapōta-bandha), is originally a Chalukyan feature and it is very frequently found in Kēraḷa, especially associated with circular temples. Another very common feature is the vēdi or vēdika above the adhiṣṭhāna marking the beginning of pāda (wall). In kapōta-bandha adhiṣṭhāna, praṇāla was fixed on upper part of kapōta or above the vallabhi. In recessed type adhiṣṭhāna, praṇāla comes out from the kampa above kumuda. Decoration with dentil course was also in vogue during early phase. Decorative floral design alternating gaṇa on kampa and vēdi was innovation of 11\textsuperscript{th} century. Replacing dentil course with vyāḷa and simha māla was introduced by the 12\textsuperscript{th} century. Elaboration of adhiṣṭhāna with detailed upapīṭha found trend from 14\textsuperscript{th} century onwards.

Generally, Kēraḷa temple adhiṣṭhāna has a height between 0.51 to 1.65 meters. The height of upāṇa varies from 0.05 to 0.23 meters, jagatī’s height range between 0.11 and 0.56 meters. It is usually a tall straight moulding. Kumuda above Jagati are either vṛttta (convex) or tripaṭṭa (tri faced) in shape and varies in height from 0.15 meters to 0.48 meters. The top most members, vēdi, have a height varying between 0.10 to 0.43 meters.

The Tantrasamuccaya speaks of two types of adhiṣṭhāna based on division of height of each moulding. It speaks of adhiṣṭhāna measuring 24
parts and 21 parts. Accordingly in the first type the total height of adhiṣṭhāna is divided into 24 equal parts, among which three parts constitutes pādukam, eight parts constitutes jagati, seven parts form kumuda, remaining six parts are sub divided into ten to place the gaḷa, kampa, gaḷa and paṭi with three, two, three, two parts respectively. In the other variety of adhiṣṭhāna, the total height is divided into 21 parts, in which three parts form pādukam seven parts constitutes jagati, six parts form kumuda, one part form kumuda paṭi, two parts for gaḷa, half part for gaḷa-paṭi and one and half part for paṭi with vājanas.

The material used for adhiṣṭhāna is granite except in rare instances where lateritic stones are used. The sōpāṇa or entrance stair way to śrīkōvil (dvāramukha sōpāṇa) are also made of granite. This sōpāṇa have either straight or lateral flights of steps. Side banister, also made of granite, is fixed on the sides of the steps. The half arch shaped banister, resembling trunk of elephant is called hasti-hasta (pl.3.18). General pattern shows the banister top issuing out of the vyāla’s mouth, at times with complete standing figure of vyāla also. Sides of the banisters display great art work, ghanadvāra motifs, vase motifs, floral decoration and figures of various divinities are themes that find expression on the banister.

Praṇāḷa, the water chute for draining of lustral water from sanctum, is fixed into adhiṣṭhāna on the floor level of interior. Praṇāḷa in Drāvida
architecture has undergone many developmental stages to transform from simple channel with a lipped terminal to have simha mukha base, faceted shafts with pearl string or creeper decoration and a gō-mukha end. There has been gradual development from lipped terminal channeled stone to sharp curvature at the end to fluted variety to ornamental shaft in elephant trunk shape and to have supporting dwarf figure at the end of the jalāyana. In Kērāḷa vastly seen variety are those which issues from a simha mukha, has ornamental śuṇḍu (elephant trunk) and ends with gō-mukha (pl.3.19). From 11th century onwards the supporting dwarf figure in different poses also became an indispensable part of the praṇāḷa. It is opined that Kerala’s production of ornate praṇāḷa was a result of Chalukyan influence.

Along with adhiṣṭhāna sōpāna and praṇāḷa were also built with granite. When a temple is being reconstructed, usually the adhiṣṭhāna are retained, because of the lasting nature of the material where as the upper part was built with perishable materials. Thus even when the temple is reconstructed, it is possible to have the original plan retained with original adhiṣṭhāna. Praṇāḷa patterns are also indicators of developmental phases. Hence the adhiṣṭhāna and praṇāḷa could be considered important evidences on determining the date of a temple.

- **Pāda/ Bhitti/ Wall**: The second component on the elevation of a Drāviḍa temple is pāda or wall portion. In the Drāviḍa tradition, the pāda is always
with pilasters and niches. During the Pallava period the exterior walls were fully decked with sculptures and pilasters. The tendency to dispense with embellishment and appreciate the value of plain space is found in many Muttarayar and Pandya temples. Addition and multiplication of niches were later trends that found great vogue under the Cholas.

In the Kērala idiom the outer wall of śrīkōvil is ornamented with ghanadvāras, return and projection of wall, dēvakōṣṭas and sham niches, pilasters or kuḍya stambhas, tōraṇas, paṇjāras, jālakas, nāsika etc. From the early phase itself, providing four functional doors was in practice in Kērala temples. Śrīkōvil with one functional door and three ghanadvāras were also simultaneously built. Having three functional doors with one ghanadvāra and two functional with two ghanadvāras were innovations of the middle phase.

Projection and return of the wall are frequently seen on temple built on square plan, such projection and returns has less occurrence on circular plan structure and is very rare on those with apsidal plans (pl.3.20). Generally the projection and return of the wall are extended downward through the adhiṣṭhāna till the pādukam. General pattern of one central and two corner projection with two returns divide the wall into five bays. Multiplication of these bays by projection and return is also practiced (pl.3.21). Kuḍya stambhas (pilaster motifs), tōraṇas with makara arches or śāla śikharas, kapōta paṇjara are the wall decoration elements associated with projection and return. Extension of wall niches down penetrating the adhiṣṭhāna till the
kumuda moulding or kapōta moulding are also seen in some temples. In the absence of projection and recess, the walls are relieved with pilasters, niches and ghanadvāras. The decorative element of the wall has a steady presence in Kēraḷa throughout difference phases. Karṇas with sham niches, bharḍras with functional door or ghanadvāras and hārantara with śāla pañjaras is common pattern associated with decoration with projection and recess.

The material used for construction of wall portion are lateritic stone, brick, lime plastering, stucco and in few cases wood. Rock was not the preferred material for wall in Kerala temple architecture.

- **Prasthara:** The third component on elevation of Drāviḍa temple is prastara or entablature. It is the moulding above the wall and pilasters. In the pure Drāviḍa tradition prastara consist of uttīra, vājana, vallabhi, kapōta, ālinga and antari mouldings. Uttīra is the principle beam; vājana has wider dimension and projects above the beam. Vallabhi is a concave moulding above the projection, it is bounded above and below by vājana courses. Cornices or kapōta moulding is above this and it is a straight and projecting tier of rectangular blocks in early temples and gets a flexed appearance in later times. These cornices are embellished with kūḍus or alpa nāsikas without pilaster below. Ālinga is the moulding above cornice and on top is the recessed moulding of antari.¹⁸
The Tantrasamuchaya speaks of prastara with nine mouldings – kalluttara, vājana, bhūtamāla, vājana, kapōta, ālingapaṭi, gaḷa, paṭi and vājana from the bottom to top\(^{19}\). In Kēraḷa idiom kapōta with nāsika or kūḍu and vallabhi is the prominent moulding. Prastara is generally represented by uttara, valabhi, kapōta and ālinga; antari, if present, are blocked by later additions\(^{20}\). In most ēkatala structures, especially the circular ones, the prastara portion is obscured by overhang of the sloppy roof above. As the circular ēkatala shrines has high base, short wall and a vast over hanging conical roof, the scope of revealing any part above the bhitti is meager (pl.3.22). Supporting rafters of the roof are fixed just below the prastara. In dvitala and tri tala structures, the wall portion of āditala has longer dimension. Hence, not only the prastara is revealed but also an additional component of hāra with aedicule are placed above are visible too (pl.3.24). High relief of kūṭa, śālas and pañjaras are made in the hāra portion. In circular dvitala vimāna, the hāra is partly obscured by the extended roof, the rafters of which are fixed between hāra and prastara. In the square dvitala vimāna, rafters are fixed to the middle of hāra and the roof is not over shadowing these areas, thus gives a very clear view of the prastara and hāra. Temples from the developed phase are added with decoration of horizontal animal sequence pattern, arranged symmetrically in different parts of the hāra.
Chapter III  
Introduction to Kerala Temple Architecture

- **Super Structure:** The Drāviḍa form of temples displays a vertical aspiration from the adhiṣṭhāna to stūpi, though with projection and recess. But the Kēraḷa variation of Drāvida style declares its unique identity by breaking this vertical aspiration. Pattern and principle of elevation are identical up to the prastara in both the styles. But Kēraḷa example reveal marked variation in the execution and conceptualization of the super structure.
  
  o **Grīva:** According to the canons the component above prastara is grīva. In the east coast of the south India, being highly recessed grīva is a discernible distinguished part. But in the west coast, the Kēraḷa temple do not display such a recession on the outer wall of the śrīkōvil. Moreover, the parts above the prastara are literally obscured under the sloppy roof above. Thus a concept of grīva by recess, as in the Drāviḍa form, is not traceable in Kēraḷa variation of Drāviḍa style. Grīva may be only the little upward rise of the plain wall above prastara followed by sloping roof\(^{21}\).
  
  o **Śikhara:** The component part above the grīva is śikhara. General Drāviḍa śikhara is eight sided massive stone, placed over the grīva. In the Kēraḷa variation śikhara is not a single independent component placed over grīva, rather it takes form of a sloping roof in pyramidal or conical shape, depending on its ground plan. The roof extends down
till the prastara or in some instance, below the prastara covering considerable parts of the wall itself.

Above wall the pyramidal framework of wooden beams are fixed. These beams ultimately join at the top where the pyramidal or conical roof culminates (fig.3.4, 3.8). Measures and proportion play a key role in joining of raters as whole super structure rests on this frame. From the tip of top corner a small wooden ball hangs inside called kūṭam, into the holes on this kūṭam are fixed top ends of all beams (pl.3.27). The construction of framework and its forms was thought and planned, proportionate in all its parts. The various kinds of rafters, their length and thickness, their parts were calculated as forming the hypotenuse of the respective angle of posts and brackets. The various joints have each proper name and employment. Over the wooden frameworks are laid the well burnt tiles or copper sheets. In case of circular and apsidal śrīkōvil a layer of overlapping wooden plank arrangement (pl.3.25) is made above the wooden framework and then the thatching with terracotta tiles or copper sheet is done on the top.

**Dvitala and Tritala Śrīkōvil:** In dvitala and tritala śrīkōvils the components of elevation up to prastara is similar with ēkatala or ēka bhūmi śrīkōvil. The dvitīya tala is created by vertical extension of
inner wall (ārūḍha bhitti). This extension serves as the wall of upper storey, which is non-functional. The prathama and dvitiya talas are separated from each other with section of roof which has wooden framework and thatching with terracotta tiles. Miniature form of vēdi, pilaster, prastara and hāra with aedicule, identical with lower story are created on the wall of dvitiya tala. Above this wall portion the roofing built in the same method. In effect roofing of the dvitala and tri tala śrīkōvil gives the impression of layered roof horizontally intersected by extending wall portion (pl.3.36). The reduplication of the roof on second and third storeys not only adds height but also provide further opportunity of embracing a wider range of images\textsuperscript{23}.

In the case of four sided śrīkōvils the pyramidal roof has hipped ends on each of its sides and the ridge of the roof running breadth wise is extended by the hipped end and carried with it the uppermost part of the roof which thus forms a widely projected gable. In case of having attached mukha-maṇḍapa on the front the roof takes the form of a huge projecting gable. The conical roof above the circular śrīkōvils does not have gables. The elongated apsidal roof of the apsidal śrīkōvil also does not have gable on the front. The science of wooden constriction secured the greatest precision, stability and durability to the building. The weight of roof was well distributed and it does not completely
burden the wall. Thus roof had firm support and interior is replete with an impeccably spaced rhythm of concentric pillared colonnades.

**Stupi:** On top of the roof, the pinnacle or stūpi, called as Tāḷikakkutṭam in the regional language, is placed. This is always shaped as kalaśa on full bloomed lotus. Number of the kalaśa vary from one to three and are placed above one another, ending with a lotus bud pointing to the sky. The pinnacle is always made with metal, copper or gold (pl.3.28).

### 3.6 Materials used:

The materials used for the construction of super structure are wood as beams and planks, terracotta tile and metal sheets. These materials are comparatively lighter than enduring stone and are processed and placed in such a way to meet the native climatic conditions. The wooden planks above the wooden framework are very well polished and smoothened. The tiles above the wooden planks, which form the outer most layer of the roof, are highly heated in kiln and has a glazy smooth surface which makes them water proof. Thus sloping roof facilitates easy flow of water and prevents water logging, because native climate is characterized by two monsoons in a year with heavy rainfall. In the dvītāla and trītāla śrīkōvils, the intersection of the roof with extending walls break the water flow and longer contact between and water and the roof of the structure. The downward extension of the roof covering upper part of the wall
also serves the purpose of protection from rain water. The lightness of the super structure is essential to keep the balance of complete structure. The wall which carries the super structure is built with lateritic stone or brick or wood or stucco. Lighter roof is essential for balancing. The adhiṣṭhāna is built with solid granite. Use of granite at the base serves three purposes. Firstly, it provides a strength and stability to the base to counter the thrust placed by the elevation of structure. Secondly, the granite is comparatively less vulnerable to natural agents of decay like termites, salinity and moisture of the soil etc. Thirdly, given the loose nature of the soil on which the temple is built, the solid granite proves to be more firm and stable.

Thus the use of materials adopted by builders in Kēraḷa is in conformity with native climatic conditions. Their deep knowledge about the intrinsic relation between architectural form and environmental space which envelops the architecture are evident from the choice of materials as well as its appropriate allocation in the structure of the building. The organic unity and balance between architecture and its environment has to be viewed as decisive factors behind the formulation of particular architectural form. The variations that Kēraḷa temples display from its counterparts on the east coast can be explained as a result of the same environmental factors. The influence of natural environment not only affects the form of architecture, but the choice of raw materials too. The absence
or least preference of stone in building upper part of the temple also is a result of attempt to create lighter structure that the nature of the soil could withstand.

Kēraḷa temples, especially circular ones, express great aspiration towards horizontality. Thus sloping conical roofs, resting on broad cylindrical base, extend down leaving a narrow area uncovered between the roof and adhiṣṭhāna is an evidence of this concept. The high base and low extending roof reduce the wall portion and the horizontal bands above the adhistana also accents down the verticality to emphasize horizontality.

3.7 Shrine Interior:

The śrīkōvil of Kerala temple contain varied architectural features on plan and elevation. The details discernable from outside has been discussed in the foregoing. But the interior of these structures hold many more features which are accessible to the priest of the temple only. Temples of both sandhara and nirandhara plan were built from the early phase itself, ēkatala dvitala temples were also built simultaneously.

Sandhara temples can be divided in two groups namely shrines with wall of garbhagrha (inner wall or aruda bittit) rising to the same height as those of the outer walls (bāhya bhitti), another type represented by those garbhagṛha forms an independent identity with a domical roof surmounting the sanctum (pl.3.29). The latter feature is a development traced from the middle phase (1001 to 1300 AD)
onwards. The garbhagṛha distinguished by the inner wall formed miniature Drāviḍa vimāna. This inner vimāna is built with independent grīva and śikhara and occasionally it has its own adhiṣṭhāna and other components of Drāviḍa vimāna (pl.3.30). By housing a miniature Drāviḍa vimāna inside a Kēraḷa styled temple with sloping roofs, a beautiful synthesis of pure d Drāviḍa form and its Kēraḷa variation is created in the interior of Kēraḷa śṛṅkōvil. The arrangement of inner ambulatory path and columniation is also remarkable in the śṛṅkōvil interior. Provision of double ambulatory path around the garbhagṛha and having two rows of pillar are new additions in the lay out brought in the middle phase. However instances of double row of pillar are limited with circular śṛṅkōvil only.

The interior of garbhagṛha also displays great architectural work. Square, being considered the perfect shape has been the most popular plan of garbhagṛha. The garbhagṛha of circular śṛṅkōvils were also built on square plan and at times the circular exterior of garbhagṛha wall was transformed internally into square. Circular garbhagṛha inside a circular śṛṅkōvil is a very common arrangements but transformation of the circular exterior into square interior was also an equally common practice. The ceiling above the garbhagṛha forms an arch created by corbelling. The corbelling at the middle of interior of the garbhagṛha wall from four corners and four sides i. e. on eight sides and culminates in an arch on the top. This corbelling is called turava in the regional language. With this
corbelling, adaptation of eight sided śikhara interior is also traceable in Kērala temples.

3.8 Measurements:

The terms used in Malayalam to denote a temple are ‘Kṣētram’, ‘Ambalam’, ‘Kōvil’ and ‘Kāvu’.

There are certain proportions and schemes followed to maintain the balance and exactness of a structure. The measurements are taken with utmost care. The existence of a structure depends upon the perfection of the measurement. The mātrāṅguḷam is equal to the middle portion of the middle finger of the officiating priest (approximately one inch).

Mātrāṅguḷam is the unit of length, which is basic unit for all further measures of the building. It determines the cubit and the cubit determines the height of the pīṭha (pedestal) on which the idol of principal deity is to be fixed. In turn, height of this pedestal determines height of idol and height of idol determines height of entrance door to sanctum sanctorum. This in turn determines the distance between śrīkōvil and entrance on the valiyambalam, height of principal balipīṭha and height of dhwajastambham. The adhiṣṭāna of śrīkōvil is the model adhiṣṭāna. Same pattern is to be followed for adhiṣṭāna of namaskāra-maṇṭapam, curṟambalam, dhwajastambham and valiyabalikkal.
3.9 Temple rites:

Temple rites performed presently relate to the principles laid down in the tāntric texts written by Kērala authors based on śāstras. The major works referred to and followed are Puṭayūrbbhāsa by Puntōṭṭat Vasudevan (1342 AD), Tantrasamuccayam by Chennas Narayanan Nambutirippad (1420 AD) and Śēṣasamuccayam by Chennas Sankaran Nanbutirippad. Paraśurāma Anuṣṭhānam relate to the rites prescribed by lord Paraśurāma himself and followed exclusively. Iśāna Śiva Gurudēva Paddhati is another important text followed in Kerala. Various tantric scriptures, both Āgamās and Samhitās, are used for day to day rituals of Kerala temples.

Among the three tāntric systems prevalent in India viz. Kashmiri, Bengali and Kerala, the first two are categorized as Vāmamārga and the Kerala system as Dakśinamārga. Dakśinamārga is more Vedic in nature. The system followed in Kerala is predominantly sāttvika in nature. Yantrās and hōmas are also used for worship and deities.

The ritual of ceremonial worship in the Kerala temples is a combination of both Vaidika with Vedic mantras and methods and tāntric with non vedic mantras and rules, the tāntric elements slightly predominating over the Vaidika. It therefore, comes under the category of Tantrika-Vaidika following the classification in the Puruṣārthaprabodha of Brahmaṇadabhārati. It is Vedic worship in the tantric mode. The Pañcatattva or the Pañcamākāra, which constitutes an integral part of orthodox Śakta tantras, has no place in the Devi
temples of Kerala. Madya, māmsa, matsya, and maithuna, whatever may be their denotation and significance, are as such entirely absent in the routine of Kerala temple rituals. Mudra alone is there but it is in the sense of gesture, and there is quite a lot of this.

The numbers of pūjas per day as well as the time of their performance are also bound by rules. The Niyamam Niscayikkal process (an oath of fixing up the procedure) done immediately after the installation of the idol, lays down the procedure of timings, customs, details of nivēdyā etc. Once it is decided, all are bound to follow them scrupulously and no deviation should be made. There can be new additions to these procedures but only at the time of puna pratistha (re-installation).

**Nitya nidānam / Daily rites**:-

Nitya nidānam means the rites conducted when the temple is opened daily. It covers various rituals.

The pūja timings vary according to sunrise and sunset. The variation is based on uttarāyana and dakṣiṇāyana and as per longitude. Traditionally the timings of pūja are determined according to the shadow of a man by one’s own foot. The method is separately determined for forenoon and afternoon. The time so obtained in terms of nāljīka is based on kāla–niṃaya presented in scriptures. The daily rites followed in Kerala temples are as follows:-
• **Paḷḷiuṇartal (waking up the deity from sleep):** This is the ritual of waking up the deity from Nidrāsamādhi. Generally this is done at Brahma muhūrtam (3 hours prior to sunrise). In many temples this is practiced between 4 am to 5.30 am. The Paḷḷiuṇartal is done by blowing the conch shell three times accompanied by pāṇḍi mēḷam (music by certain percussion and pipe instruments). Before this ritual, the inner precincts of nālambalam have to be swept and kept tidy and all the lamps lighted. But the garbhagṛha is opened a little later by the tantri or mēḻīnti.

• **Nirmālya darśana:** The chief priest after his dēha śuddhi reaches the garbha dwāra and ring bell handed on either side (seeking permission from deity for entering sanctum). After opening door, the inside lamps are lit. Worship of idol at this stage is called Nirmālya darśana. Then the priest removes the remnants of previous day’s offerings such as flowers, garlands and other decorations.

• **Abhiṣēka** – Abhiṣēka or oblation with a liquid medium is done immediately after removal of Nirmālyam. The idol is bathed with different articles like, honey, milk, bhasma etc. After the Abhiṣēka and rituals with mantras, the idol is decorated with new cloths, ornaments, fresh flower garlands etc.
• **Nivēdyā:-** It is making offering to the deity. The articles of nivēdyā vary from temple to temple, with regard to niyamam–niścayikkal. The usual offerings are malar (fried paddy), avil (rice flakes), plantains, sugar, molasses, trimadhurm etc.

• **Uṣa pūja** – The first worship of the day is Uṣa pūja or pūja at dawn. This pūja is followed by recital of gāyatri. Generally it is performed 30 minutes after sunrise.

• **Etṛṭṭ pūja:**- This pūja is conducted at the moment when the rays fall of the sun right in front of the deity or garbhagṛha. In addition to the routine offerings of nivēdyā it is followed by śri bali if the temple has parivāra pratistha. Otherwise the bali is done at balipitha of Agni. During this ritual the śri bali (siveli) vigraha of the deity is carried by assistant priest while the chief priest make the offering oblations offered to various bali–dēvatas in the antar maṇḍala, outer bali pīṭhas, valiya balikal and dhwaja.

• **Pantīraṭi pūja :**- Pantīraṭi, literally means 12 feet, determines the time of pūja based on human shadow measuring 12 feet in the morning (approximately between 8 and 8.30 am). Only in major temples this pūja is performed and is elaborate in nature.

• **Navakam:** - Only in major temples, especially Śiva temples, navaka kalaśābhiṣēkam or navakam, is done (around 9 and 10 am). For this pure water in nine kalaśas (pots) are subjected to detailed pūja and abhiṣēkam.
done on the idol. In some cases 201 or 1001 kalaśābhīṣēkams are also
done at this time.

- **Ucca pūja:** - This has to be normally done after madhyāhna–sandhya. But
generally in major temples this is done around 12 noon and in smaller
temples before 11 am. This pūja is also preceded by nivēdyam and
followed by śrī bali.

- **Attālapuja:** - This is the last ritual of the day. The time for this pūja is
  between 1 and 2 hours after sunset i.e. before 8.30 p.m.

**Māsa visēsams / Monthly rituals:**

This consists of four type’s viz., based on week days, tithis, asterisks and
specified days in a month.

**Āṭṭa visēsams / Annual festivals**

Mainly the utsavam and other annual festivals like Vinayaka caturthi and Asṭami
Rohini etc

**Utsavam:** - The very purpose of conducting utsavam is to bring prosperity to the
devotees and people of the locality apart from increasing the Dēva caitanyam.
The principal rite of utsavam is the utsavabali, which is a more elaborate process
than Śrī bali. This is to be conducted by tantri, not chief priest. The kriyas done
by him start with the rite of muḷayiṭal and hoisting of flag of the deity.
3.10 Notes and Reference

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Fig. 3.1: General layout of Kēraḷa temples with Prakaras

A. Antar-Mañḍalam/Akāṭṭe Balivaṭṭam
B. Anta hāra/ Currambalam/ Nalambalam
C. Madhyā hāra
D. Bāhya hāra
E. Maryāda
Fig. 3.2: Elevation and Section of Kēraḷa type ēkatala śrīkōvil

1. Padma Upāna
2. Adhiṣṭhāna
3. Pilastered Wall
4. Sloping Tiled Roof
5. Stūpi
6. Sōpāna
7. Outer wall of Śrīkōvil
8. Inner wall / Wall of Garbhagṛha
9. Corbelling / Turava
10. Wooden plank of roof
11. Wooden beams of Framework
12. Kutam / the joining point of beams
Fig. 3.3: Elevation of Drāvida vimāna
Fig. 3.4: square dvitala śrīkōvil - section

Fig. 3.5: Square śrīkōvil with mukha maṇḍapa namaskāra maṇḍapa - plan
Fig. 3.6: elevation and section of ruined circular temple at Tirunillai

Fig. 3.7: Plan of circular śrīkōvil with circular garbhagṛha having square interior
Fig. 3.8: Section of ēkatala apsidal śrīkōvil

Fig. 3.9: Plan of Apsidal śrīkōvil with interior division and pillared pradakṣiṇa-patha
Map. 4.1: Ernakulam District - Political Map