CHAPTER 10

10 CONCLUSIONS

This study undertook a group of 25 temple complexes as mentioned in chapter 1 belonging to Kalyani chalukya period for understanding the general principles of composition and a precise possible method of conceptualisation to a precise constructional instruction methods with a specific focus on the temple geometry. The majority of earlier research on Indian temple was focussed on descriptive approach in terms of its evolution, distinct typological variations with respect to region to region and to note the various other factors that governed the evolution. The definitions of the nomenclature of various elements and the configuration of them in terms of vertical and horizontal layers also done. The broad classification of the temple based on its mode and architectural vocabulary was understood by the scholarly works of Hardy and others as it has given a conceptual clarity for general composition with the elements of sala kuta and panjara.

A major amount of works has tried to explore the canonical texts and their interrelation to actual temples. Most of these approaches also clearly accept that the there are differences between the theory and actual practice. There is a considerable gap in terms of identifying the precise constructional method that can eliminate any ambiguity of conceptualisation to actual unambiguous simplified instructional level tools, which has to be consistent and free from interpretational bias. Especially when a number of people from stone cutters to fine finishing artisans are involved in the various stages of construction process over a long period of time.

The marked difference of this research approach is a deviation from the study of temples through static 2 dimensional drawings as deciphered later to a 3D approach and consider architecture as a product of dynamic movement of two basic parameters called path and profiles.

This research has not investigated the generation of plan geometry and this aspects are discussed by earlier researchers such as Hardy and this has been referred earlier and Hardy's proposition of square, expanding squares, and the other ideas of rotated squares to generate stellate and the ideas of breaking lengths into largely even divisions has been adapted as base idea. It is also taken that the squares and arcs of circles were the larger geometry from which the temples derived various forms by experimentations and modifications.
It is also to be noted that when paths are generated using square or stellar or circular geometry experimentation (even more and more sides of stellar paths). The vertical profile is decided by *tala* basis in fragments of a large profile. This large overall profile as we have seen could be either straight line or even be curvilinear. It is clear that overall profile was determined by the idea inward staggering or that of pyramidal side to follow the forces of gravity.

The fragmented profile could be used as templates at each *tala* and it is also possible for later *sthapathis* to vary the profile somewhat. Only thing that was to be followed is the *'kampa'* that was left behind which will be used by later *talas* and its artisans and *sthapathis*

From all the case examples, which represent a variety of temple forms when analysed from the point of path and profile parametric design approach show a high degree of consistency of identical results when compared with actual temples forms. The degree of precision has been remarkable right from the smallest component of a single course of temple, columns of varying designs, plinths, super structures of distinctly different genre. The variants and possible hybrids that can be achieved by making subtle changes that are done in these parameters can be seen in different examples. From the consistency of these results it can be concluded that the principle of path and profile is one of the dominant principle that is present in Indian temples. However whether the artisans used exactly the same computational method as developed in this study cannot be claimed from this study alone (because we are very far removed in time by almost 1000 and the methods of construction moved from material and hardly we find the continuity in several centuries). However the simplicity of the method and the resemblance to the stone marks similar to profile drawings found so far at some of the archaeological sites does reinforces the possibility of application of this method a very high thus can lead to further investigation in future research.

We have seen in previous chapters chapter possibility of how simplified tools of p-n-p could have been very useful in conceiving and executing the varied geometry. It is mainly possible because temples had been conceived in perfect symmetry on all sides. However it may be argued that the investigation with computational graphics that showed the ease of conceiving forms as shown in the thesis may not be possible in 9-11th century CE when these were constructed. It is to be noted that it was the re discovery of the idea which was possible through these graphics. The idea would have generated over a long and by many generations, and can be conceived as a template moving around the details filled in as offsets.
10.1 Contributions of this research

- A definite pattern of form generation defined as "path and profile method (p-n-p) " is identified which can be applied in form generation of temple
- A simplified graphical representation of complex forms in terms of most important parameters identified
- Theoretical computed models of the temple architecture of Kalyani chalukya's has been compared against actual temples and found the similarities accurate by comparison
- A possible construction/instruction method is deciphered which is found in traditional texts 'kampa' as means of communication of course wise geometry and has a potential of self generative concept in temple forms.

The versatility of path and profile application to highly different typology of temples ranging from simple square based, stellar to hybrid typologies with varying degrees of intricacy is demonstrated.

10.2 Further research

Further investigation of these degrees of form generative parametric approaches and the relative degree of sophistication may be used for chronological evolutionary understanding. and this question can never be answered by singular form exploration approach but with contemporary mathematical and geometrical knowledge systems deeply embedded in their learning processes.

Further work is needed to establish precise hand tools, measurement tools, and method of assembling of courses to precise geometry. The methods of construction influences the generation of forms as well.

It also noted that during investigation there had been structural failures and certain geometries which cannot be explained the structural systems which held the edifice. this is the area of further investigation.
Works sited


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Bibliography


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