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Chapter 9

Dependence and Freedom in the Theory and Practice of Indian Temple Architecture

1 Introduction

To what extent have the architects of temples in India been constrained by canonical texts? The degree to which any artist can be free from the norms and conventions of their art is a huge question. In the case of an architectural tradition like those responsible for temple building in medieval India, passed down through lineages and from master to pupil, dependent on patronage and large resources, invested with social and political significance, and held to be sacred, the meaning of ‘artistic freedom’ is all the more questionable. The architects of Indian temples, moreover, developed complex architectural languages which I would characterise not so much as ‘strict’ as highly structured. If temples can be considered an art form, then a particular form of temple is analogous to, say, a sonnet in poetry, where creating something new within the given pattern is the whole point, and to stray too far from it is no longer to write a sonnet. Indian temple forms follow certain modes, for each of which is developed a variety of particular types. Typology, a ubiquitous preoccupation of the texts, is also a conspicuous aspect of temple architecture itself from the moment around the fifth century CE when a repertoire of basic shrine types inherited from timber construction began to be translated into masonry. Combining existing types to create new types became a fundamental design principle. Constraints as well as creative possibilities were thus inherent in the tradition, the medium. Someone carrying out the role of a temple architect, though not without agency, was in all these respects dependent. Such dependence must be borne in mind as we examine the more specific question of constraints imposed by texts.

Theoretical treatises on the various branches of knowledge, written mainly in Sanskrit and in verse, proliferated in India from the early centuries CE. They are termed *śāstras* and embody *śāstra*, the rules or science of the given subject. Sections on *vāstuśāstra*, the science of Architecture, were at first incorporated in religious texts, and later into *śilpaśāstras* focusing on building crafts, and more specifically *vāstuśāstras*, texts devoted principally to Architecture. They discuss the planning of towns and villages, palaces, and houses, as well as containing important sections on

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temples. *Vāstuśāstras* also deal with mythological, ritual, and astrological matters along with painting, sculpture, and even dance.

Academic knowledge of these architectural texts dates back to the mid-nineteenth century,¹ but they remain little understood. Generalisations about ‘the texts’ abound, whether venerating them as a key to ancient wisdom, or dismissing them as abstruse and of no practical use. A widespread assumption is that texts laid down rules that bound the artist, a straitjacket constraining creativity. This notion can be backed up by the tenor of the texts themselves. They promise prosperity, wellbeing, and salvation if their prescriptions are followed, while often warning of dire consequences if they are ignored – though the most conspicuous grim warnings are about respect for the *vāstupuruṣamaṇḍala*, a gridded diagram laid out ritually on sites, dealt with in separate sections of texts and having little to do with the actual design of temples.

A contrary view to the one that sees the texts as strict and rigid is put forward by an anthropologist studying contemporary *sthapatis* (traditional architects) in south India. Stressing the flexible and improvisatory character of actual temple building, Samuel Parker writes:

In everyday speech śāstra is typically used by Tamil architects and sculptors, not in reference to books, but to bodies of knowledge. Whether or not that knowledge has been written down, or indeed been objectified in any coarse form, is a secondary matter [. . .] The pragmatic observation to be emphasized in this regard is that many architects and sculptors are honored in their profession as masters of śāstra *without their ever having read a single written version of any śāstra, either in Sanskrit or modern Tamil translation* [author’s emphasis]. This, in fact, is more the rule than the exception. In the domains of concrete practice, knowing śāstra is quite independent of the written word, even though the written word may be one of its contingent, and highly honored, incarnations.²

Parker’s argument is persuasive and, though about the present day, weighs against assuming that texts must have been followed strictly in the past. At the same time, while recognising the power of texts to confer authority and prestige, he all but denies them relevance to the making of temples. Appreciation of such relevance, particularly in relation to the past, calls for a focus on architecture, and particularly on design. What we now call ‘design’ is a focus of the texts themselves, even though treated in a way that is rather divorced from material and construction.

My argument in this paper is from the perspective of an architect. It is based on studies of *vāstuśāstra* texts from central, western, and southern India done in collaboration with my Sanskritist colleagues Libbie Mills and Mattia Salvini. From the instructions given in texts it is possible, to various degrees of detail, to draw the architecture of which they speak, which can then be compared with the built record.

1 Ram Raz, *Essay on the Architecture of the Hindus* (London: Royal Asiatic Society, 1834).

2 Samuel K. Parker, “Text and Practice in South Asian Arts: An Ethnographic Perspective,” *Artibus Asiae* 63, no. 1 (2003): 9–10.

These instructions are framed in terms of how to draw a design rather than how to build, seeming to invite an architect to draw while reading or reciting. A study of this kind cannot illuminate questions of agency, dependence, and power-relations among all the people involved in commissioning and building temples,³ but it does provide a solid basis for discussion of the relationship between theory and practice in temple design.

I shall briefly present examples of temple designs treated in different texts and compare them to actual temples from their respective traditions. The focus will be the ‘shrine proper’ of the temple, the *vimāna* or *mūlaprāsāda* housing the deity, the one essential element of the temple and the part that mainly preoccupies the texts. But first I shall outline a few observations on how texts variously can relate to practice, which will then be fleshed out in the examples.

1.1 Texts Reflect Their Time

Vāstuśāstra texts claim divine origin, framed as being revealed by the primordial architect (Viśvakarman in northern Indian texts, Maya in southern ones). Nevertheless, the nature of such texts changes. Early ones deal with the general shape and proportion of temples, suggestive of wooden construction and with little sense of detail or style, as in the passages on temples found in the *Bṛhatsaṃhitā*, an astrological treatise of around the sixth century CE. The mature monumental temple architecture of the seventh to ninth centuries was presumably accompanied by a burgeoning of the related textual tradition.⁴ Little of that survives, however, and the variety and relative lack of standardisation in temples of that period give the impression that practice far outstripped theory at this stage. The majority of known *Vāstu* texts are from the tenth to thirteenth centuries, the era when temple-building activity reached its apogee. Although surviving manuscripts are invariably later, the original date of texts can generally be deduced because their treatment of temple architecture is detailed enough to recognise the period and region of the temples described. Standard temple types became more prevalent during this period, and texts may have contributed to this phenomenon. This is not to say that they froze the tradition, since, with the passage of time, new standard types emerge in both texts and the built record. Archaic fragments can crop up in later texts, but they stand out in a corpus that evolves as temple architecture evolves. Clearly, to whatever extent texts fix temple designs, they do not do so for all time.

³ For a discussion, based on texts, of the relationships between actors at the higher end of the social scale, see Libbie Mills, “The Master May Wander into Servanthood: The King and his Architect,” *South Asian Studies* 37, no. 1 (2021): 13–25.

⁴ For surviving examples of such texts see Libbie Mills, *Temple Design in Six Early Śaiva Scriptures: A Critical Edition and Translation of the Prāsādalakṣaṇa Portions of the Bṛhatkālottara; the Devyāmata; the Kīraṇa; the Mohacūrottara; the Mayasaṃgraha; and the Piṅgālamata*, Collection Indologie 138 (Pondichery: Institut Français de Pondichery/École Française d’Extrême-Orient, 2019).

1.2 It all Depends Which Text

Even once we reach the period when texts describe identifiable temple forms, the ability of texts to constrain an architect varies greatly depending on how close a given text is to practice. Some are so abstract and theoretical that they seem obsessed with classification for its own sake, with no sense of the forms they classify. While many texts are immersed in the architecture of their regional tradition, portions of certain texts, for the sake of comprehensiveness, deal with temple forms from distant places refracted through a limited understanding. The amount of architectural detail explained in texts varies greatly. Some will specify only the essentials of a composition, so that the resulting drawing, if done without elaboration or embellishment, will simply show the basic components, their relationships, and their proportions wherever these have been prescribed. Others will deal with mouldings and ornaments. The degree to which details are explained affects the capacity of a text to influence the making of detail in practice.

1.3 A Text Only Ever Provides a Framework

However detailed the verbal instructions, they are still an abstraction, a skeleton without flesh. So much has been left out and so many gaps have to be filled. Some decisions will be determined by the practicalities of materials and construction, some by the techniques, preferences and habits of craftsmen, some by unforeseen contingencies. Many decisions will be made through sheer invention and improvisation, albeit guided by unwritten, visual norms of the architectural tradition. The text provides only the initial diagram, a framework for the creative process. Even in terms of frameworks, texts tend to be incomplete. There are subtleties and complexities that go unmentioned in texts, which could only have been learnt through oral transmission, observation, and practical experience.

1.4 Temple Proportions Rarely Follow Texts Exactly

Since recognisable temple designs including known standard types are prescribed in texts, to that extent temples of those kinds do correspond to texts, at least inasmuch as their composition conforms to the framework provided by a text, down to whatever level of detail the text reaches. Beyond compositional arrangement, texts explain, more or less completely, the underlying geometry of the temple and relative proportions of its parts (actual measurement being a separate and less prominent aspect). Often the geometry of an actual temple plan is just as in certain textual prescriptions. This does not mean that the building must have followed a text, firstly because we cannot be sure which came first, and secondly because, for many complex types, a certain geometry is

intrinsic to the particular three-dimensional arrangement of parts. I have not yet found a temple corresponding to a text in all its proportions in elevation, even allowing for the inevitable irregularities of a hand-made object. But texts do give invaluable clues as to what to look for when analysing the proportions of temples, saving us from many blind alleys.

1.5 Emanatory Sequences Underlie Both Texts and Practice

No matter to what extent texts are vehicles of authority and continuity, they undermine any idea of fixity. Typically, their presentations of temple types follow various kinds of sequential logic. Generally progressing from simple to complex, one type develops from another, drawn out in a sequence of emanation. The progression can be simply numerical, more subtly mathematical, or a perceptible bodying forth with each successive form incorporating the previous one. Actual traditions of practice follow the same kinds of evolution, the architectural systems with their implicit rules containing inherent possibilities which the architects extrapolate. Theory and practice develop side by side and symbiotically in this exploration. A fixed form is only ever a moment in an eternity of flux.

1.6 Texts Can be Creative

Texts articulate developments realised in practice, no doubt perpetuating them for a certain time, but can also imagine possible designs that may later, or never, be built. Texts and practice share a way of thinking about architecture, so texts can envisage untried possibilities. They can think ahead to extend a formal sequence or make flights of fancy with no end beyond their own blossoming. Ideas can be tried out freely in words that architects could not build, dependent as they are on patronage, resources and perhaps, paradoxically, texts.

1.7 Texts Can Stimulate Creativity

Rules and frameworks arguably provide a propitious starting point for human creativity, and this is certainly the case for any cultural production overtly based on formal patterns. If the author(s) of a text on temples think ahead to an untried stage of a sequence, to build it is all the more a challenge and an achievement. Where a text imagines a unique and extraordinary concept, if ever it is built the architect will have to summon all their powers of interpretation and imagination, and the result will be something they would not have invented alone, and which could not have been fully foreseen.

2 Evolving Temples and Texts in the Nāgara Tradition

An emanatory sequence of the kind just evoked, whereby temple forms emerge and proliferate one from another, stands out especially clearly in the Nāgara traditions of central and western India between the eighth and twelfth centuries, where we witness development from the single-spired Latina form into *anekāṇḍaka* (composite) designs. A particular series of *anekāṇḍaka* temples found in several *vāstuśāstras* is a classic textual example of this kind of sequence, overlaying an ingenious arithmetical game onto the successively emerging compositions. This is the series of twenty-five *sāndhāra* temples (temples with *andhāra* or internal ambulatory) beginning with a type called Keśarī. The numbers game concerns the crowning element of a Nāgara temple, termed *aṇḍaka* (literally ‘egg’). A simple Latina *śikhara* (spire) is *ekāṇḍaka*, ‘with one egg’. The Latina form is really the first egg from which composite forms hatch, but the Keśarī at the start of this series is *pañcāṇḍaka* – with five *aṇḍakas* – and each successive type has to have four more, so that the twenty-fifth type, the Meru temple, ends up with an auspicious 101 *aṇḍakas*. The composers of the text had to think up designs to fit each step. Clearly, they did not have to invent all of them from scratch as they were thinking in parallel with an exploration already underway in practice, albeit without any need to build every permutation systematically and in order.

While the series presents evolving forms, the different versions in which it appears evolve with the times. The earliest exposition, to my knowledge, is the one in chapter 56 of the eleventh-century, central Indian *Samarāṅgaṇasūtradhāra* (SSD), that great compendium of architectural texts from different traditions. I argue that here the designs suggest a tenth-century origin as they do not include various complexities evident in the eleventh and twelfth centuries,⁵ when the dense Śekhārī mode became the predominant form of *anekāṇḍaka* Nāgara temple. Some of the types, needed to fill numerical slots, are not fully resolved in three dimensions, and would need to be radically rethought in order to make satisfactory buildings. Chapter 159 of the *Aparājītapṛcchā* (AP), a twelfth-century *vāstuśāstra* from western India, has moved on, and takes account of the full range of mature Śekhārī types that had appeared by that time.⁶

5 Adam Hardy, *Theory and Practice of Temple Architecture in Medieval India: Bhoja's Samarāṅgaṇasūtradhāra and the Bhojpur Line Drawings*, trans. Mattia Salvini (New Delhi: Indira Gandhi National Centre for the Arts with Dev Publishers, 2015): 75–127; Adam Hardy, “Evolving Temples in Evolving Texts: The Keśarī Series of Nāgara *prāsādas*,” in *Proceedings of the 24th Conference of the European Association of South Asian Archaeology and Art*, ed. Anna Filigenzi (Naples: ISMEO, forthcoming).

6 Adam Hardy, “Evolving Temples in Evolving Texts: The Keśarī Series of Nāgara *prāsādas*,” in *Proceedings of the 24th Conference of the European Association of South Asian Archaeology and Art*, ed. Anna Filigenzi (Naples: ISMEO, forthcoming), and Adam Hardy, “The Twenty-Five Temples Starting with Keśarī According to the *Aparājītapṛcchā*,” in *Kapila Jnanagarbha – Wisdom Unfolding: Knowledge Offerings in Memory of Dr Kapila Vatsyayan*, ed. Advaitavadini Kaul (New Delhi: DK Printworld, forthcoming 2022).

Texts encapsulate the compositional framework of a design, not the detail or stylistic character, so, in my drawings, I have tried to be diagrammatic without being totally abstract, while avoiding conventions belonging to centuries later than the twelfth. A sample of the *prāsāda* types prescribed in the chapter 159 of the AP are shown in Plate 9.1. The first two, the Keśarī and Sarvatobhadra, are the same designs as in the SSD, designs already well-established by the tenth century among built temples. Nine of the twenty-five types mark actual shifts in the underlying arrangements of parts, the remaining ones being variants of those. In this text, the alternative to a miniature *sikhara* as a crowning element is a *tilaka*, which means a rectangular pavilion crowned by a *ghaṇṭā* ('bell'). A *tilaka* does not count for an *aṇḍaka*. Neither does a pediment of unfurling horseshoe-arch motifs (*gavākṣas*), here termed '*udgama*'. One of these over the *bhadra* (central projection) will not give us an *aṇḍaka*, whereas a half-*sikhara* (*uraḥśṛṅga*) in the same position will do so. These are the rules by which elements are shuffled around to get the required *aṇḍaka* count for a given type.

Number 13 in the series, the Indranīla temple (Plate 9.1, no. 13), has 53 *aṇḍakas*. As almost always in northern texts, we begin with the plan and proceed to the elevation. I have drawn vertical proportions 'by eye' as they are not specified in this chapter. As ever, the plan is conceived as an idealised one with four identical sides, rather than with one side modified to accommodate a doorway, antechamber, porch, etc. The plan is a square divided into sixteen parts, and this is the point in the series where a kind of component appears, the *pratyaṅga* or quarter-*sikhara*. All these temples are presented as *sāndhāra* (with internal ambulatory), but this is by no means compulsory when such types are built:

*ṣoḍaśāmsākavistāre dvibhāgaḥ karṇavistarāḥ |
nandikā caikabhāgena dvyaiṅśaḥ pratirathas tathā ||159.31||*

In a width of sixteen *aṅśas* (part, *bhāga*), the *karṇa* (corner element) is two *bhāgas* wide. There is then a *nandikā* (minor projection) in one *bhāga*, and a *pratiratha* (intermediate main projection) of two *aṅśas*.

*punar nandī bhaved bhāgaṃ bhadraṃ vedāṃsavistaram |
samastaṃ samaiṅśkāsaṃ bhadre bhāgo vinirgamaḥ ||159.32||*

Once again, there should be a *nandī* (= *nandikā*) of one *bhāga*, and a *bhadra* (central projection) four *aṅśas* wide.

Everything has matching projection [breadth and depth the same]; in the *bhadra*, the projection is one *bhāga*.

*catuḥṣaṣṭhyaiṅśako garbho veṣṭito bhittibhāgataḥ |
bāhyabhittir bhaved bhāgā dvibhāgā ca bhramantikā ||159.33||*

The *garbha* (sanctum) is sixty-four *bhāgas* [8x8], enclosed by one *bhāga* of walls.

The outer wall should be one *bhāga*, while the *bhramantikā* (ambulatory) should be two *bhāgas*.

(from AP 159, translation by Mattia Salvini)

The plan is complete, and we proceed to the elevation. Each element of the plan is taken in turn, with specifications given for the corresponding crowning components

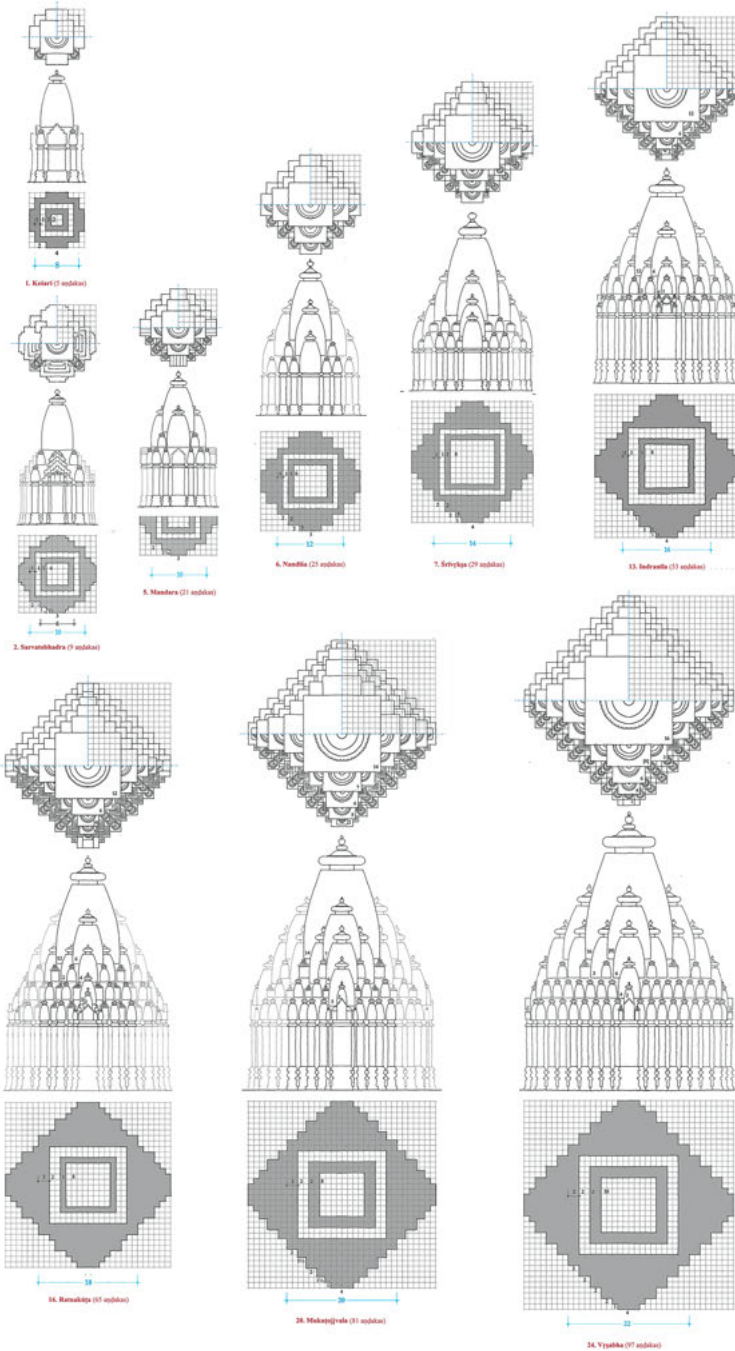


Plate 9.1: Anekāṇḍaka (composite) types of Nāgara temple: drawn from instructions for ‘the twenty-five temples beginning with the Keśarī’ in chapter 159 of the Aparājitaṅgchā.

of the superstructure, in ascending order. The specifications apply to one of each kind of plan element, so we have to bear in mind that there are four corners, eight intermediate projections (*pratirathas*) and so on. The term *śṛṅga* is used here for a miniature *śikhara* (adding an *aṇḍaka*).

*karṇe śṛṅgadvayaṃ kāryaṃ śikharaṃ sūryavistaram |
nandikāyāṃ tu tilakaṃ pratyāṅgaṃ ca dvibhāgikam ||159.34||*

One should build two *śṛṅgas* in the *karṇa*, while the [main, upper] *śikhara* has a width like the suns [twelve].

In the *nandikā* there is a *tilaka*, and the *pratyāṅga* (quarter-*śikhara*) is two *bhāgas*.

*śṛṅgadvayaṃ pratirathe uraḥśṛṅgaṃ ṣaḍaṃśakam |
śṛṅgadvayaṃ nandikāyāṃ uraḥśṛṅgaṃ yugāṃśakam ||159.35||*

There are two *śṛṅgas* in the *pratiratha*; an *uraḥśṛṅga* of six *aṃśas*;
Two *śṛṅgas* in the *nandikā*; an *uraḥśṛṅga* of four;

*dvibhāgaṃ bhadrāśṛṅgaṃ tu śṛṅgārdhe caiva nirgamaḥ |
karṇe pratirathe caiva hy udakāntarabhūṣitam ||159.36||*

A *bhadrāśṛṅga* (half-*śikhara* on the central projection) of two *bhāgas*; and the projection is half of the *śṛṅga* [i.e. the *śṛṅga* on the *bhadra* projects by 1 module].

In the *karṇa* and in the *pratiratha*, it [the temple] is adorned by *udakāntaras* [recesses – as we would anyway expect].

*indranīlas tadā nāma indrādīsurapūjitaḥ |
vallabhaḥ sarvadevānāṃ śivasyāpi viśeṣataḥ ||159.37||*

It is then called Indranīla, worshipped by the gods starting from Indra.
It is dear to all the gods, and especially to Śiva.

(from AP 159, translation by Mattia Salvini)

In its architectural components and the relationships between them, the Indranīla corresponds to a widespread type of Śekharī temple that first appeared towards the end of the eleventh century.⁷ However, its geometry is not the standard one, built on an initial square of twelve parts, with deeply embedded *nandikās* that are not apparent in the ground plan. The Indranīla works well, but I know of no built examples, so perhaps it remained theoretical. In the text, three succeeding types make variations within the basic framework of the Indranīla, bringing the number of *aṇḍakas* to 61. The number of parts in the plan is then increased to 18 for the Ratnakūṭa type, with its 65 *aṇḍakas*.⁸

⁷ See typology in Adam Hardy, “Śekharī Temples,” *Artibus Asiae* 62, no. 1 (2001): 81–137. This type is Type 4 in that scheme.

⁸ Type 5 in the scheme referenced in the previous footnote.

*bhūdharasya yathā proktaṁ dvibhāgaṁ varddhayet punaḥ |
pūrvavad dalasaṅkhyāyāṁ bhadrāpārśve dvinandike ||159.40||*

It [the previous type] is explained to be the Bhūdara; on the other hand, one should increase it by two *bhāgas* [thus 18]. It is the same as before In terms of the number of *dalas* (components, projections), [except that] the two flanks of the *bhadra* [each] have two *nandikās* (minor projections).

*dvibhāgaṁ bāhyabhittis ca śeṣaṁ pūrvaprakalpitaṁ |
talacchandam iti khyātam ūrdhvamānam ataḥ śṛṇu ||159.41||*

The outer wall is two *bhāgas*; the rest is built as in the previous one.

Thus, the *talacchanda* (plan) has been explained. Listen, then, to the measurements above.

[‘*Urdhvamāna*’ is the usual term for vertical measurements. Here we move on to the elevation, but without measurements.]

*karṇe dviśṛṅgaṁ tilakaṁ śikharaṁ sūryavistaram |
tilakaṁ dve nandikāyāṁ pratyaṅgaṁ tu dvibhāgikam ||159.42||*

In the *karṇa*, there is a *tilaka* with two *śṛṅgas* [reading downward], and a *śikhara* as wide as the suns [twelve];

Then two *tilakas* in the *nandikā*, and a *pratyaṅga* (quarter- *śikhara*) of two *bhāgas*.

*śṛṅgatrayaṁ pratirathe ṣaḍbhāgā corumañjarī |
tilake dve punar nandyām uraḥśṛṅgaṁ yugāṁśakam ||159.43||*

There are three *śṛṅgas* in the *pratiratha*; an *urumañjarī* (*uraḥśṛṅga*, half *śikhara*) of six *bhāgas*, two *tilakas* in the *nandī*, and an *uraḥśṛṅga* in four *aśās*;

*nandyām ca śṛṅgatilake tribhāgā corumañjarī |
dvibhāgaṁ bhadrāśṛṅgaṁ ca ardhe cārdhe ca nūrgamaḥ ||159.44||*

And in the *nandī* there is a *tilaka* and a *śṛṅga*; the *urumañjarī* is three *bhāgas*.

There is then a *bhadrāśṛṅga* of two *bhāgas*; the projection is half in each case [i.e. 1½ for the lowest *uraḥśṛṅga* but one, and 1 for the *uraḥśṛṅga* directly over the *bhadra*].

*ratnakūṭas tadā nāma śivaliṅgeṣu kāmadaḥ |
praśastaḥ sarvadeveṣu rājñāṁ tu jayakāraṇam ||159.45||*

It is then called *Ratnakūṭa*, bestowing one’s wishes in respect to the Śivaliṅgas.

It is praised for all the gods, and it makes kings victorious.

(from AP 159, translation by Mattia Salvini)

The underlying composition represented by the *Ratnakūṭa* became established in western India during the twelfth century, though it was not yet widespread. The *Samadhiśvara* (or *Samiddheśvara*), Chittor (Plate 9.2) cannot be very distant in date from the AP, and its geometry corresponds closely to the *Ratnakūṭa* of the text. In terms of artistic freedom, once we reach this degree of complexity it would be difficult and pointless to invent everything anew, and the framework of a type allows choice of what to do within it.

After the *Ratnakūṭa*, the AP has three direct variants, and then moves on to plans of 20 and 24 parts, as the sequence unfolds towards it culminating 101 *aṅḍakas*. Such plans are not found in Śekharī temples before the fifteenth century, and in this respect the text looks forward, exploring untried possibilities. However, in the text, the basic three-dimensional relationships between components do not change. The last ten designs are not found in practice, and in fact have unresolved gaps that become

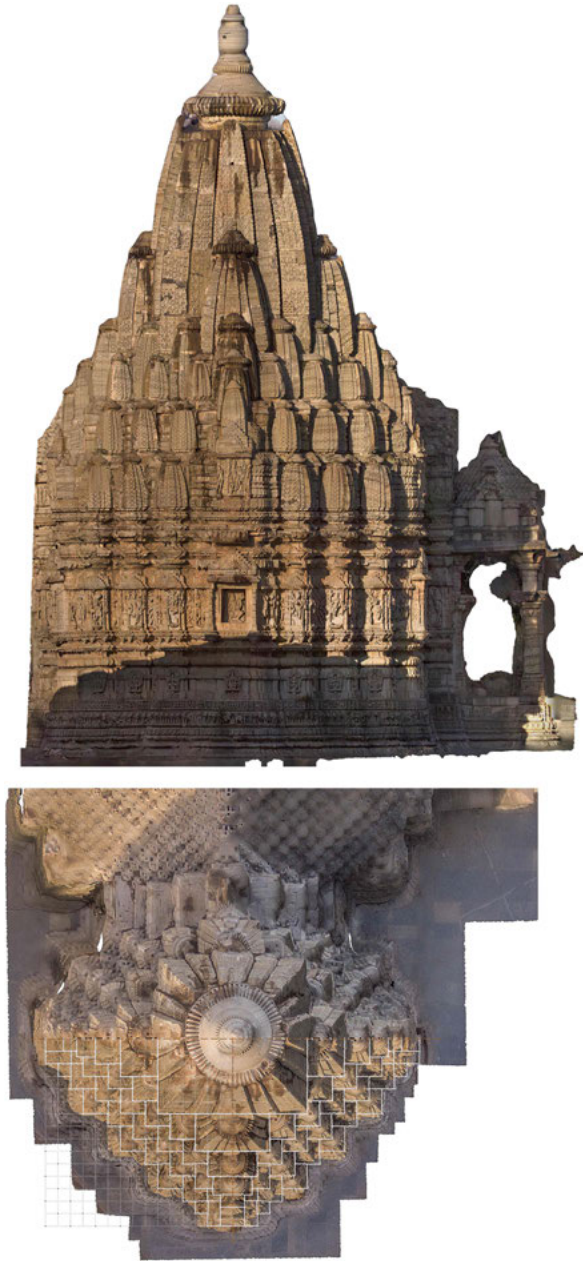


Plate 9.2: Samadhiśvara temple, Chittor, Rajasthan (c. third quarter of twelfth century).
Analysis based on photogrammetric model by Kailash Rao.

visible if we draw the roof plans. In later centuries the continuing Nāgara tradition discovered other forms to build on those plans, and other principles for creating an exponential proliferation of *aṇḍakas*.

As an illustration of how a text can be interpreted in different architectural styles, we may look at an example of how a twentieth-century practitioner of traditional temple architecture interprets another medieval version of the Keśarī series. The *Shilparatnakar* (*Śilparatnākara*, SR), published in 1939 by Narmadashankar M. Sompura, is intended to encourage a revival of traditional Indian architectural principles for their use in practice. It is based on different sources available to the author, some not published elsewhere. Chapters do not identify their respective sources but appear to be faithful to them. They present them both in the original Sanskrit and in a Gujarati translation, illustrated with the author's drawn interpretations of the textual prescriptions. Chapter 6 is on the Keśarī series, and the temple designs that this chapter describes are essentially the same range as in the APP, not more 'advanced', so it seems not to be very different in date, although the technical terminology is not the same. Sompura's drawings do not aim to reflect the dates of the texts. Instead, their style is what for him would have been the contemporary one for traditional temples in Gujarat, familiar to him as heritage from his family, notably through their involvement at Mount Shatrunjaya, Palitana, where expansion of the Jaina temple complex had been prolific through the nineteenth and early twentieth century. Elements of this style go back to the fifteenth-century Nāgara resurgence, including the false balconies in the first tier of the superstructure, and the particular treatment of *nandīs* or re-entrant projections. Instead of being conceived as embedded, the crowning pavilions of the latter started to be articulated as thin, protruding *kūṭastambhas* (miniature *śikharas* on pillars), later often dispensing entirely with articulation of the pillar portion, so that *śṛṅgas* and *tilakas* are mere pots and pans on a shelf. These aspects are more than just stylistic features, as they affect the way in which a text can be interpreted in terms of architectural composition.

I can sometimes disagree with N.M. Sompura's reading of the text, and at other times prefer a different choice of interpretation. More fundamentally, his inherited style brings different results from my attempt to present the framework while minimising style, and not to trespass beyond the date of the text. As an illustration, here are the SR's instructions for the Vajraka *prāsāda*, the second variant deriving from the Ratnakūṭa type, with 77 *andakas*. At this point, the temple designs in the SR are very close to those of the AP. N.M. Sompura's drawing and mine based on the same text are compared in Plate 9.3.

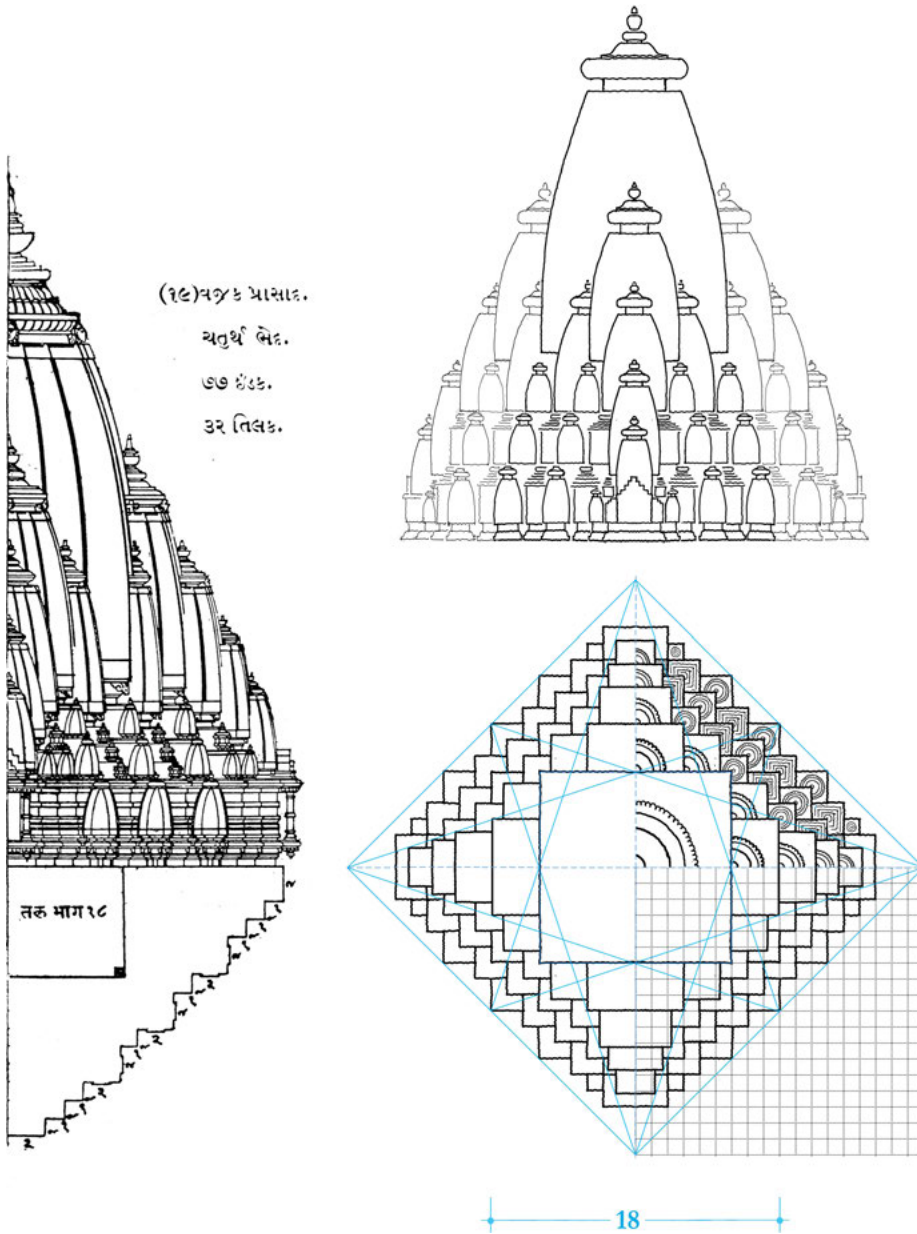


Plate 9.3: The Vajraka temple type drawn from the Śilparatnākara by N.M. Sompura (left) and Adam Hardy (right).

*vajrakaṅ ca pravakṣyāmi sarvaśobhāsanvitam |
caturasrikṛte kṣetre hy aṣṭāśavibhājite || 6.121 ||*
I will describe the beautiful Vajraka [temple].

On a square site divided into 18,

*śālā bhāgadvayā kāryā bhāgaikena ca nirgatā |
pallavibhāgam ekena nirgame 'pi tathaiva ca || 6.122 ||*

the *śālā* (= *bhadra*, central projection) is of two parts and its projection (*nirgama*) is one part. The *pallavi* portion (= *nandikā*, small projection next to *bhadra*) is one part, as is its *nirgama*.

*dvitīyā ca tathā kāryā cānugaṅ ca dvibhāgikam |
nirgame ca samaṅ proktaṅ nandikābhāgam eva ca || 6.123 ||*

The second [*pallavi*] is the same. The *anuga* (= *pratiratha*, intermediate projection) is two parts [wide] and the same in projection. The *nandikā* portion is the same [as the other ones].

*koṅaṅ bhāgadvayaṅ kāryaṅ sthāpayec ca diśāsu vai |
tadūrdhve śikharaṅ kāryaṅ sarvalakṣaṇasaṃyutam || 6.124 ||*

The corner is 2 parts. One should establish it in the directions.

Above that is the beautiful *śikhara*.

*bhadre ca rathikā kāryā hy urucatvāri kalpayet |
naṃdikāyā dvaye caiva śṛṅgaṅ śṛṅgaṅ niyojayet || 6.125 ||*

At the *bhadra* is a *rathikā* (= *udgama* pediment) and a set of four *urus* (*uruśṛṅgas*, *uraḥśṛṅgas*, half-*śikharas*).

In the two parts of the [front] *nandikā* one should position a pair of *śṛṅgas*.

*tadūrdhve tilakaṅ sthāpyaṅ cānuge trayaśṛṅgakam |
tāladvayā ca saṃsthāpyā nandikā tilakāṅkitā || 6.126 ||*

Above that is a *tilaka*. At the *anuga* is a set of three *śṛṅgas*.

The *nandikā* (i.e. the remaining *nandikās*) is to be established with two tiers (*tāladvayā*), decorated with *tilaka*[s].

*koṅe śṛṅgatrayaṅ kāryaṅ upāṅgaṅ vāmadakṣiṇe |
rekhāvistāram ūrdhve ca padānāṅ kārayed budhaḥ || 6.127 ||*

A set of three *śṛṅgas* should be put at the corner, and an *upāṅga* (= *pratyāṅga*, quarter-*śikhara*) to north and south (on either side).

Above those parts, the wise man should make the expanse of *rekhās* (i.e. the lines of the *mūlamanjari* or main *śikhara*).

*śataṅ ca yugavedānāṅ rekhāvistāraḥkalpanā |
saptasaptatyaṅḍakaiś⁹ ca prāsādo vajrako mataḥ || 6.128 ||*

The shaping of the *rekhā* breadths is in 144th part (*śataṅ ca yugavedānām*).¹⁰

The Vajraka temple has 77 *aṅḍas*, [. . .]

9 Translator's note: *adhikaiś* emended to *aṅḍakaiś*. The emendation is made on grounds of sense. We already know from verse 4 that the Vajraka has 77 *aṅḍas*.

10 This specifies the *śikhara* curvature.

*dvātriṃśattilakair yukto ghaṇṭākūṭaiḥ samanvitaḥ |
vajrakaṃ kārayed yas tu vajraṃ patati śatruṣu || 6.129 ||*
[. . .] and 32 *tilakas* with *ghaṇṭākūṭas* (Sainvaraṇā *kūṭas* [form of the *tilakas*]).

A thunderbolt (*vajra*) falls on the enemies of the man who builds a Vajraka [temple].

(from SR 6, translation by Libbie Mills)

An immediate difference between our drawings is that Sompura has a large shelf in the first tier of the *śikhara*, pushing the crowning elements of the *nandikās* up a level. The crux of our different interpretations lies in the second line of verse 125 and the first phrase of verse 126. Both of us understand these lines as referring to the front pair of *nandikās*, flanking the *bhadra*, and that each carries a *śṛṅga*, his being equal and mine at two different scales (the inner one on the surface, the outer one embedded). Sompura then interprets ‘Above that is a *tilaka*’ as a single *tilaka* over the two *śṛṅgas*, strictly speaking over the outer one, stepping up to meet the second *uraḥśṛṅga* (counting downwards). Having my (more twelfth-century) *śṛṅgas* at the lower level, I feel that each of these calls for a *tilaka*. As the text specifies a total of 32 *tilakas*, eight are need in each *bhadra-to-bhadra* quarter of the superstructure, of which I now need four more, and Sompura six. Having made the first tier into a shelf, for the remaining *nandikās* he can, in his later style, put two little *tilakas* on steps within the second tier, leaving two more to make up his six. Elsewhere he goes as far as three within a single tier, but here needs one on a higher level to meet the quarter-*śikharas*, which always have to be at the same level and scale as the corresponding *uraḥśṛṅgas*. This is rather free with the interpretation of *tāladvayā* in verse 126, but can be justified by the requirement for six more *tilakas*. Luckily, I can get my four remaining *tilakas* within two proper tiers.

3 South Indian Texts

Drāviḍa temples in the far south of India are a contrast to Nāgara ones in that the available range of shrine types remains relatively unchanged for centuries. This continuity certainly makes it more difficult to date the texts on the basis of temple composition, or to distinguish later insertions from the ‘original’. Nevertheless, the main body of the surviving texts does seem to fit with the tenth to eleventh centuries,¹¹ the time when the number of possible conceptual storeys (*talas*, *bhūmis*) in a *vimāna* exterior was extended from four to twelve and more, even if the great majority of built

¹¹ This observation is based principally on the *Mānasāra*, the *Mayamata*, and the *Diptāgama*. The *Kāmikāgama* is an example of a religious text dealing at some length with temple typology but in a way that is very distant from architectural design and practice. *Samarāṅgaṇasūtradhāra* (chapters 64–65) and *Aparājitaṭṭcchā* of Bhuvanadeva (chapter 174) deal with Drāviḍa temples with architectural detail, but as if it is something foreign.

examples have no more than two or three. This period corresponds to the height of Coḷa dominance in the south, and the prescribed designs can be most convincingly drawn in a ‘Coḷa’ style.

Basic shrine shape is always an essential aspect for variation in Drāviḍa temples: they are predominantly square, but there is an option for them to be circular, rectangular, apsidal, oval, or octagonal (theoretically also hexagonal), either throughout or just in the upper portions (the lower part remaining square or rectangular). Texts make these options explicit (*Mānasāra* 19.3–4). Virtually all these southern texts follow a common format, with a simple logic of sequence whereby the *vimāna* types begin with one storey and proceed in numerical order to twelve storeys. Rather than starting from the plan and its proportionate parts, the plan exterior is effectively fixed by specifying the relative sizes of the aedicules around its perimeter. The ratio of *garbhagr̥ha* to wall is dealt with in separate passages and is a matter of choice, sometimes quite a wide one (e.g. *Mānasāra* 19.13–15). Proportions in a plan are thus a matter of subdivision into parts rather than of following a grid. Depending on the size of the intended temple, a range of choices is also given for the width to height ratio: the *Mānasāra*, for example (11.7–11.12), gives 1:2 (with the option of increasing or decreasing the height!), 4:7, 1:1½, and 7:10. For each temple type, one is instructed to divide the height from base to finial into to a certain number of parts, a portion of which is then ascribed to each main horizontal subdivision. Depending on the width to height ratio, therefore, the vertical *bhāga* or module may well be different from the horizontal one.

Unlike the Nāgara, the Drāviḍa tradition develops a great variety of moulded bases (*adhiṣṭhāna*), generally treated in separate sections devoted to this feature. Here is another matter of choice for the design of a temple. In contrast to northern texts, moulded elements, including the base, are specified in terms of every small sub-moulding. Where these passages are coherent (and sometimes they have come down to us in a way that looks wrong when drawn) they potentially impose greater restriction than their northern equivalents, though style and certain aspects of shape remain questions of choice or habit. The shape of the crowning dome (*śikhara* in the southern sense) of the temple may be another choice where it is not specified, or where options are explicit. Beyond explicit choices, there are passages, such as this one from the *Mānasāra* (MĀ), which seem to be exhorting the builders to go forth and improvise, and to embellish the temple body to the limits of imagination and funds:

nāsikāpañjaraiḥ śālākumbhapādādibhūṣitam |
toraṇair nīḍabhadrādi mūle cordhve ca bhūṣitam ||20.32||
 It is adorned with *nāsikās*, *pañjaras*, *śālā*, *kumbhas*, columns, etc.
 The recesses and *bhadras* are adorned from bottom to top with *toraṇas*.

nānādhiṣṭhānaṣyuktaṃ nānāpādair alaṅkṛtam |
nānāgopānaṣyuktaṃ kṣudranāsyair vibhūṣitam ||20.33||
 [The building] has various *adhiṣṭhānas*, various columns,
 various *gopānas* and small *nāsīs*.

(from MĀ 20, translation by Libbie Mills)

To illustrate the process of drawing a temple from these texts, we may look at two of the two-storey temple types presented in chapter 7 the *Dīptāgama* (DĀ). This is an Āgama, a text on ritual, with substantial portions devoted to temple design. Unusually, the *Dīptāgama* specifies only one possible width:height ratio, of 1:2, for two-storey temples. If we compare its several alternative two-storey *vimānas* with those of the *Mānasāra* and *Mayamata*, we find much variation in the vertical proportions. The one scheme common to the three texts is a two-storey shrine for which the vertical height is 28 parts, as is the case for first of the first of the *Dīptāgama*'s types, the Svastika (Plate 9.4, left). Horizontal divisions are determined by an instruction to divide the width into six parts (DĀ 7.3–4), each *kūṭa* occupying one part each, the *śālā* two, and each *hāra* one ('adorned with a *hārapañjara*'). Ostensibly, this means the square, domed corner pavilion (*kūṭa*), barrel-roofed central pavilion (*śālā*), and the recessed portion in between (*hāra*), here containing a *pañjara* (horseshoe-arch gabled pavilion). It becomes clear, here and in other south Indian texts, that this ascription of widths is more crucial for defining the divisions of the wall zone than the widths of the corresponding pavilions in the 'parapet' above. This shows how the temple was conceived in terms of full-height aedicules or shrine-images, even where these are not fully articulated by pilasters in the wall. Whereas in northern texts the principal modules of the plan are set

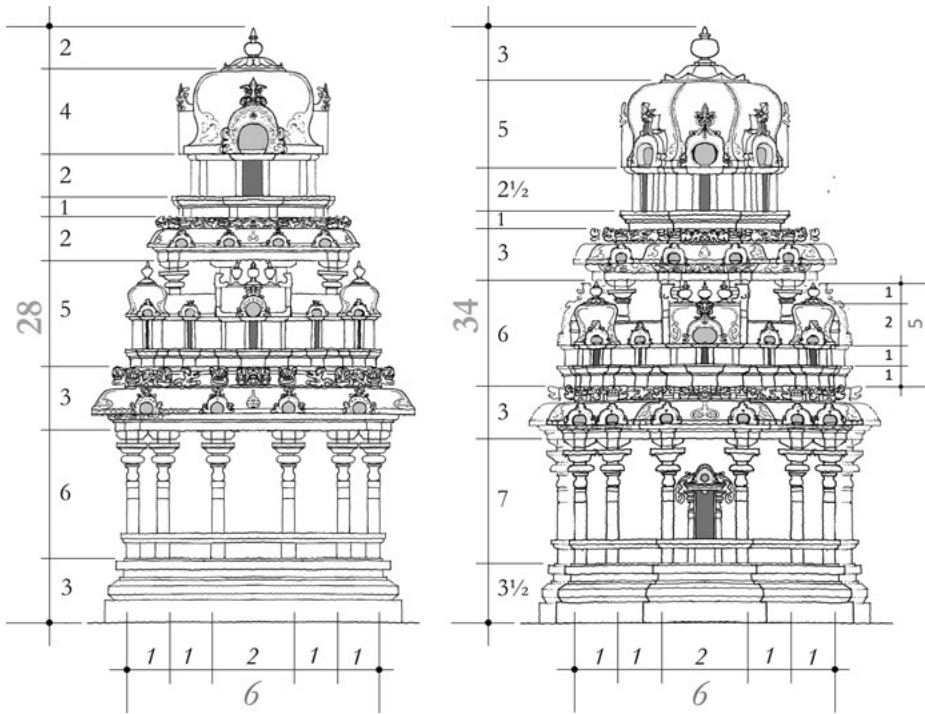


Plate 9.4: Drāviḍa temples: the Svastika and Kailāsa types drawn from chapter 7 the *Dīptāgama*.

out at the foot of the moulded base, in the south the wall zone seems to be the key. This approach ties in with not having a subdivided square as the usual starting point.

Again unusually, the *Dīptāgama* describes only one, simple type of moulded base (*adhiṣṭhāna*) (DA 6.34–36), divided vertically into 23 parts apportioned to the mouldings and sub-mouldings. I have followed that in the drawing. The term ‘*prastara*’ needs defining. It can loosely be translated as ‘entablature’ and consists of the moulded courses representing beam (*uttara*), decorated cornice (*bhūtāmālā*, *haṁsamālā* etc.), thatched eaves canopy (*kapota*), and floor (*prati,vyālamālā*) for upper pavilions. Conceptually, the second storey begins above this, though in reality there is generally no actual parapet, and the pilasters of an upper storey appear only above the tops of the *kūṭas* and *śālās* of the storey (*tala*) below. The elevation of the Svastika temple is proportioned as follows:

vimānotsedhaṃ vibhajed aṣṭāviṃśatisaṃkhyayā ||7.5||

One should divide the temple height into 28 parts.

tribhāgābhir adhiṣṭhānaṃ ṣaḍbhāgaṃ pādadairghyakam |

tribhāgaiḥ prastaraṃ kuryād ādibhūmau viśeṣataḥ ||7.6||

The *adhiṣṭhāna* (moulded base) is 3 parts. The *pāda* (‘pillar’, the wall zone with its pilasters) height is 6 parts.

One should make the *prastara* on the first level with 3 parts.

pañcabhāgordhvabhāgaṃ syād dvibhāgaṃ prastaraṃ bhavet |

vedikā bhāgam evaṃ syād dvibhāgaṃ grīvam ucyate ||7.7||

The upper [*pāda*] level is 5 parts. The *prastara* is 2 parts.

The *vedikā* (railing) is 1 part. The *grīva* (neck) is 2 parts.

caturbhāgordhvaṃ utsedhaṃ śikharaṃ kārāyed budhaḥ |

śeṣaṃ stūpir iti khyātam evaṃ dvitalamānakam ||7.8||

The wise man should make the *śikhara* (dome) height 4 parts above that.

The remainder [2 parts] is the *stūpi* (finial).

Thus is the apportioning of the 2-storeys.

There follow ‘various features’ (*vividhalakṣaṇam*) for the Svastika:

caturaśram adhiṣṭhānaṃ caturaśram śikharaṃ bhavet |

catuṣkūṭasamāyuktaṃ catuṣśālāsamāyutam ||7.9||

The *adhiṣṭhāna* is square. The *śikhara* should be square.

There are 4 *kūṭas* and 4 *śālās*.

pañjarair aṣṭabhir yuktaṃ mahānāsīcaturyutam |

prastaraṃ nāsikāyuktaṃ ṣaḍviṃśatikasaṃkhyakam ||7.10||

There are 8 *pañjaras* [in the *hāras*] and 4 *mahānāsīs* (large horseshoe arch gables in the dome).

The *prastara* has 26 *nāsikās* (small horseshoe arch gable windows in the eaves) (it is difficult to achieve that exact number symmetrically)

maṇḍapāgre viśeṣeṇa anunāsīṃ prakalpayet |

ūrdhve bhūmiṃ caturbhittim sarvālaṅkārasaṃyutam ||7.11||

One should set an *anunāsī* (?) at the *maṇḍapa* (hall).

The level above has 4 walls (*caturbhittim*), and every adornment.

*pūrvoktaiḥ pādavistāraiḥ pādālaṅkāram ucyate |
etad vai svastikaṃ nāma sarvadeveṣu yogyakam ||7.12||*

The column breadths are as given above. The ornament of the column level (*pādālaṅkāram*) has been described.

This is [the temple] named Svastika, suited for all deities.

(from DĀ 7, translation by Libbie Mills)

The instructions yield a pleasant looking *vimāna*. For the corner *kūṭas*, I could have followed the instructions in DĀ 7.28–30 quoted below as these seem to be generally applicable. However, this would make their dome proportions abnormally different from the main dome, so I have chosen to draw a taller *grīva*.

The subsequent type in the *Dīptāgama* is called the Kailāsa (Plate 9.4, right). Exactly the same instructions as the previous ones are repeated for the horizontal proportions. The base is again specified as square, this time (DĀ 7.14) with a projection ‘at the *śālā*’ (*śālānirgamam*), thus forming a *bhadra* and an explicit full-height shrine image at the centre. The *maṇḍapa* (hall) is discussed, and various details including prescriptions for a *toraṇa* (archway motif), which I have followed. The injunction (DĀ 7.18) is to make a fine *torāṇa* at the centre of the *śālā* (*śālāmadhye tu kartavyaṃ toraṇaṃ lakṣaṇānvitam*). Since such *torāṇas* are always in the wall zone, it is clear that ‘*śālā*’ refers to the full aedicule. We come to the ‘height’:

vimānotsedhaṃ vibhajec catuṣtriṃśatibhāgabhāk ||7.22||

One should divide the temple height into 34 parts.

*tryaśam ardham adhiṣṭhānaṃ saptāśam stambhadairghyakam |
tribhāgaiḥ prastaraṃ kuryād ūrdhva-pādaṃ ṣaḍaśakaiḥ ||7.23||*

The *adhiṣṭhāna* is 3½ parts. The column height is 7 parts.

The *prastara* is 3 parts. The upper column is 6 parts.

*prāg iva prastaraṃ kuryād vedikā bhāgam eva ca |
grīvotsedhaṃ dvibhāgārdhaṃ śikharaṃ pañcabhāgikam ||7.24||*

One should make the *prastara* as before (3 parts). The *vedikā* is 1 part.

The height of the *grīva* is 2½ parts. The *śikhara* is 5 parts.

śeṣaṃ stūpīr iti khyātam etad dvitalamānakam |

The remainder is the *stūpī* (3 parts). This is the apportioning of [this] two-storey temple.

(from DĀ 7, translation by Libbie Mills)

The passage that follows informs us that the upper level also has a central projection, and that the top of the temple is octagonal from the *vedikā* upwards. Finally, there are instructions for the *kūṭas* and *śālās*, followed in the drawing. The proportions of the resulting corner *kūṭa* domes diverge a little awkwardly from those of the main dome. An option is given of making the *kūṭas* octagonal instead of square.

*ūrdhva-pādonnatam yāvat pañcabhāgair vibhājayet |
bhāgaikam vedikotsedhaṃ bhāgam grīvam udāhṛtam ||7.28||*

One should divide up to the height of the upper column into 5 parts.

The height of the *vedikā* is 1 part. The *grīva* is 1 part high.

*dvibhāgaṃ śikharaṃ tasmīn ekāṃśā stūpikā smṛtā |
 etad vai kūṭasālānāṃ mānaṃ sarvatra lakṣitam || 7.29 ||*
 The *śikhara* is 2 parts. On that the *stūpikā* is taught as 1 part.
 This the proportion for all the *kūṭas* and *śālās*.

*aṣṭāśraṃ caturaśraṃ vā kūṭānāṃ ākṛtir bhavet |
 gopurasyākṛtiṃ dhyātvā koṣṭhākārākṛtis tathā || 7.30 ||*
 The design of the *kūṭas* may be octagonal or square.
 Having conceived the design of the *gopura* (gateway), the design of the *koṣṭhas* (*śālās*) is the same. (i.e. a *śālā* is, as usual, like the top of a *gopura*.)

ebhis tu lakṣaṇair yuktam kailāsam tat prakīrtitam |
 The Kailāsa is taught with these features.

(from DĀ 7, translation by Libbie Mills)

Turning to built examples, given that two-storey *vimānas* with a height divided into 28 *bhāgas* are a type common to several texts, it seems likely that temples will be found that follow this scheme. Generally, one would expect the texts to furnish clues to ways of doing things rather than total formulae. That is certainly the case with the one two-storey *vimāna* I have so far been able to analyse from an accurate photogrammetric model. This is the eleventh-century Gaṅgaikoṅḍacoḷīśvara temple at Kulampandal (Plate 9.5). Its *kūṭas* and *śālās* are the full-height (*ṣaḍvarga*) variety, and there are corner *kūṭas* on the top level, which supports a circular neck and dome. Like the Kailāsa type in the DĀ, this temple turns out to have a height based on 34, with a ratio in the first *tala* of 6:3:6 for base: wall:*prastara*, leaving a little more space for the upper portions than the Kailāsa does. In the plan, the wall zone is based on 19 of the same *bhāgas*, with the base projecting one *bhāga* beyond on either side.

Occasional passages in these southern texts show awareness that different texts have different views on some matter, implying choice again, and recognising that there is no one unquestionable authority. In a drawing aiming for authenticity above originality, where there are no instructions for details one tries to make them 'look right'. Textual prescriptions provide general principles and useful rules of thumb for making things look right without having to find out each time what works. Where instructions give something that looks wrong, the visual norms of the tradition are more powerful than the text. All in all, my impression is that these texts are not so much teaching strict rules for making particular kinds of temple, as teaching the versatile rules of the architectural game as an aid to passing on the tradition.

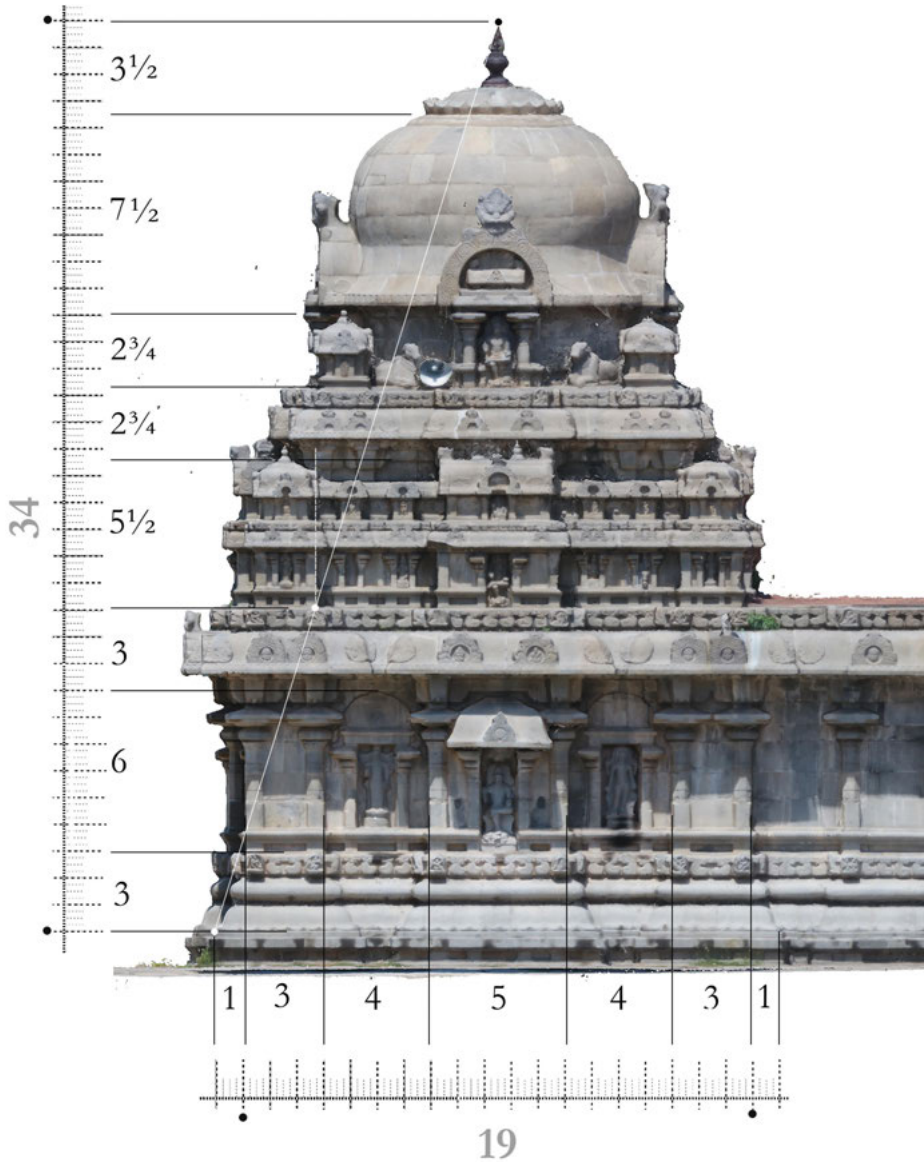


Plate 9.5: Gaṅgaikoṇḍačoḷiśvara temple, Kulampandal, Tamil Nadu (early eleventh century). Analysis based on photogrammetric model by Kailash Rao.

4 Bhūmija Temples in the *Samarāṅgaṇasūtradhāra*

In Central India and in the upper Deccan, around end of the tenth century CE, architects developed a new temple form, brought out from the northern or Nāgara matrix, while totally favoured by the Paramāra rulers of Malwa. The *Samarāṅgaṇasūtradhāra* was compiled under the auspices of the famous Paramāra king Bhoja (ruled c. 1010 to 1055).

The Bhūmija is exceptional in being developed within a short time, rather than through a continuous process of transformation as we find in the Nāgara tradition. Once established, its nature did not lend itself easily to a further, gradual blossoming, as its range of underlying shapes was inherent in the basic idea. There are three basic categories of plan, square orthogonal, stellate (but generally keeping the orthogonal *bhadra*), and stellate with eight *bhadras* – four orthogonal and four diagonal. These kinds of plan do appear sequentially in the built record, as in the texts – chapter 65 of the SSD, and in the less detailed and less usable chapter 171 of the AP. However, for each kind, the range of possibilities becomes apparent straight away, rather than gradually being revealed. A specific type can be defined simply by the number of projections (or points in the rotated-square star) and the number of *bhūmis* (levels). The texts set out these possibilities, a few of which become standard in practice, while others remain theoretical.

In the SSD, the chapter on Bhūmija temples stands out for its coherence and its complexity. The argument is tightly woven, with its own mathematical logic. It does not explicitly classify a temple type in terms of the number of projections, or of the number of points of the underlying diagram of a stellate plan, and of the number of *bhūmis*, but has a brain-teasing character demanding that these things should be deduced from its instructions. As the Bhūmija form did not evolve over centuries, the text did not need to incorporate passages from venerated earlier texts, nor account for a myriad of designs created through practice. Rather, without many built examples to draw upon, it could lay out the potential of the system. If surviving Bhūmija temples are relatively close to the prescriptions of the SSD,¹² it is because the theory and practice developed side by side at the outset in a way that would not have been possible in an older and more disparate tradition.

The Malayādri temple (Plate 9.6) is the second orthogonal type presented in the SSD (65.24–37). It represents a type that is probably the most common one found in practice, with five projections in the plan and five *bhūmis*. The SSD explains that the initial square of a Bhūmija plan should always be divided into ten parts or *bhāgas*, of which six are occupied by the *garbhagṛha*. We learn that for the Malayādri type, as for most of the others, the original division into ten should be re-divided to give a new *bhāga*

¹² Adam Hardy, *Theory and Practice of Temple Architecture in Medieval India: Bhoja's Samarāṅgaṇasūtradhāra and the Bhojpur Line Drawings* (New Delhi: Indira Gandhi National Centre for the Arts with Dev Publishers, 2015): 256–60.

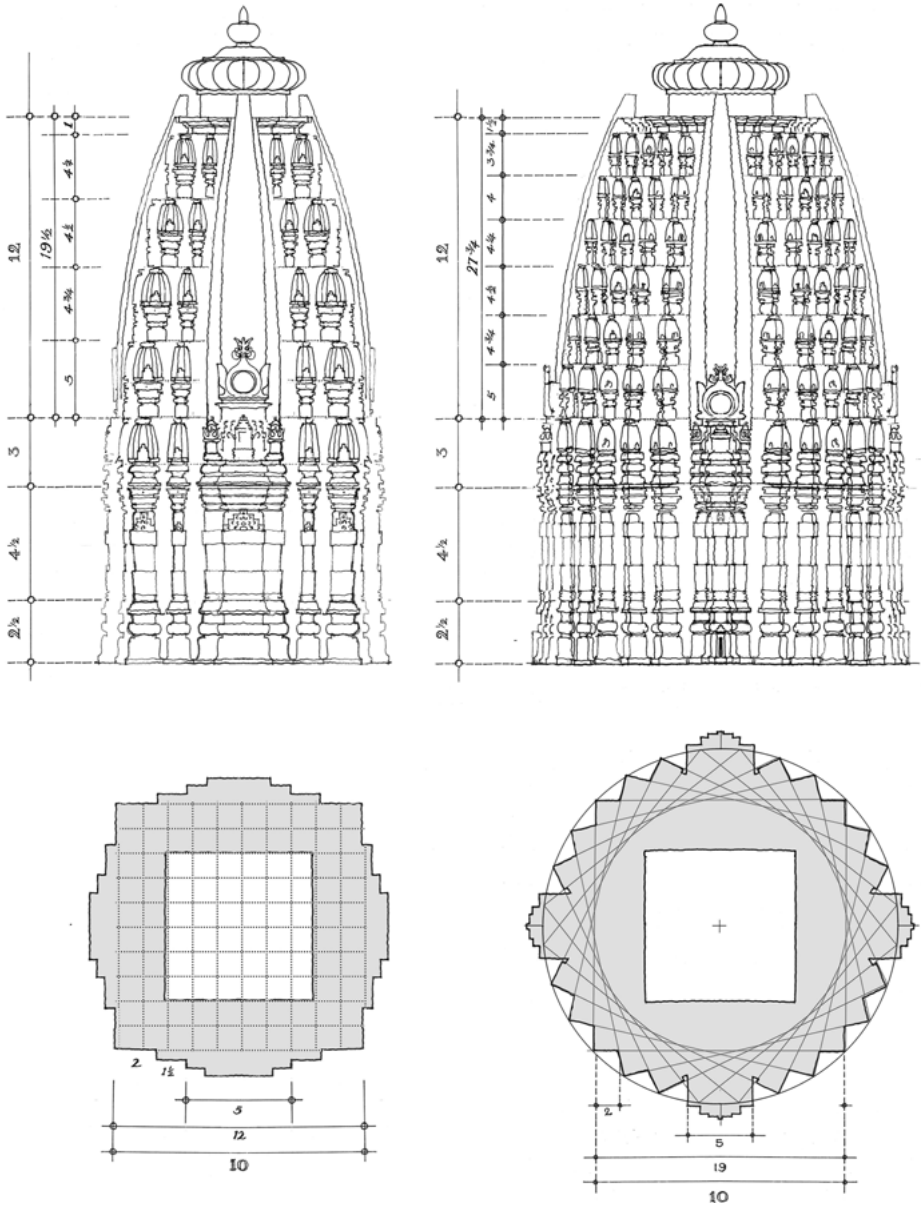


Plate 9.6: Bhūmija temples: the Malayādri (left) and Śataśṛṅga (right) types drawn from chapter 65 of the Samarāṅgaṇasūtradhāra.

size for the exterior divisions of the plan. The *bhadra* is always five of the *bhāgas* derived for the exterior divisions. The *śikhara* height (in this context measured here from the top of the second storey up to the *vedī*) is given as twelve of the original ten *bhāgas*,

and we are told that this height is to be re-divided to give yet another *bhāga* size for the vertical divisions within the *śikhara*. On the basis of these *bhāgas*, the ascending *bhūmis* are to be reduced from stage to stage by one quarter of a *bhāga*. The respective *bhūmi* heights can be worked out from the overall height that is given. This is the general principle for *bhūmi* heights, followed by all the Bhūmija types in the SSD.

In plan, at least, most surviving examples of this composition have the same proportions as prescribed in the text.¹³ The elevation is a different matter, most visibly in the loftier superstructures of built examples. A line drawing of this type of superstructure is engraved on the rocks at Bhojpur, next to Bhoja's unfinished royal temple (Plate 9.7).¹⁴ This is a beautiful illustration of the kind of skeletal framework offered by many of the texts. Measurements were taken at the site for this re-drawing, also allowing one to discover the size of the underlying *bhāgas*. These might never have been stumbled upon without the clues and general principles laid out in the text. Dividing the base width by the standard ten gives the *bhāga* size of the plan square. In terms of the original ten of the plan, the shoulder (*skandha*), the platform created by the *vedī*, prescribed by the SSD as six of the ten for stellate shrines, is here virtually that. Dividing the *bhadra* into the usual five parts gives us a new *bhāga* size which goes twelve times into the width, on the basis of which the *karṇa* is $2\frac{1}{2}$ and the *pratiratha* $1\frac{1}{2}$. This pattern of $2+1\frac{1}{2}+5+1\frac{1}{2}+2 = 12$ is precisely that of the Malayādri. In elevation, the text says that the pillar (*stambha*) portion of a *bhūmi* should be the same height as the *kūṭa* or miniature *śikhara* portion, clearly not the case in this line drawing. The implied width to height ratio of the Malayādri's superstructure is 10:13½, here it is roughly 10:17. In the text, the implied radius of curvature is less than $4\frac{1}{2}$ times with width: in the drawing is seven times. For the heights of the *bhūmis*, in the drawing it is the entire superstructure up to the *vedī* that is re-divided – by 22. This can be discovered by looking for a *bhāga* size that works for the general principle whereby heights diminish by successively one quarter of a part.

The fifth type of star-shaped Bhūmija temple in the SSD is called the Śataśṛṅga. It has the stellate equivalent of a plan with seven projections (corner to corner), and seven *bhūmis*. The term *śālā* in the Bhūmija context refers to the central *bhadra* projection, which takes the form of a round-gabled embedded shrine with Drāviḍa-esque details. In the instructions for the Śataśṛṅga type, the division of the plan into ten parts happens to be mentioned after its subdivision into 19 parts. The principle of *parivartanā* ('going round the circle') mentioned in verse 112 will be explained presently. One of the subtleties found in practice but entirely missing in the text is the presence,

¹³ The plan prescribed in the text is found at the Jāmaleśvara, Jami, at Temple 26, Ashapuri, and a plan drawing for a small Bhūmija temple at Bhojpur. The Māhanaleśvara temple, Menal, is of the same composition, but the plan proportions, based on ten parts, are $2:1\frac{1}{2}:3:1\frac{1}{2}:2$, a common scheme in earlier Nāgara temples.

¹⁴ Adam Hardy, *Theory and Practice of Temple Architecture in Medieval India: Bhoja's Samarāṅgaṇa-sūtradhāra and the Bhojpur Line Drawings* (New Delhi: Indira Gandhi National Centre for the Arts with Dev Publishers, 2015): 66–69, 254–56.

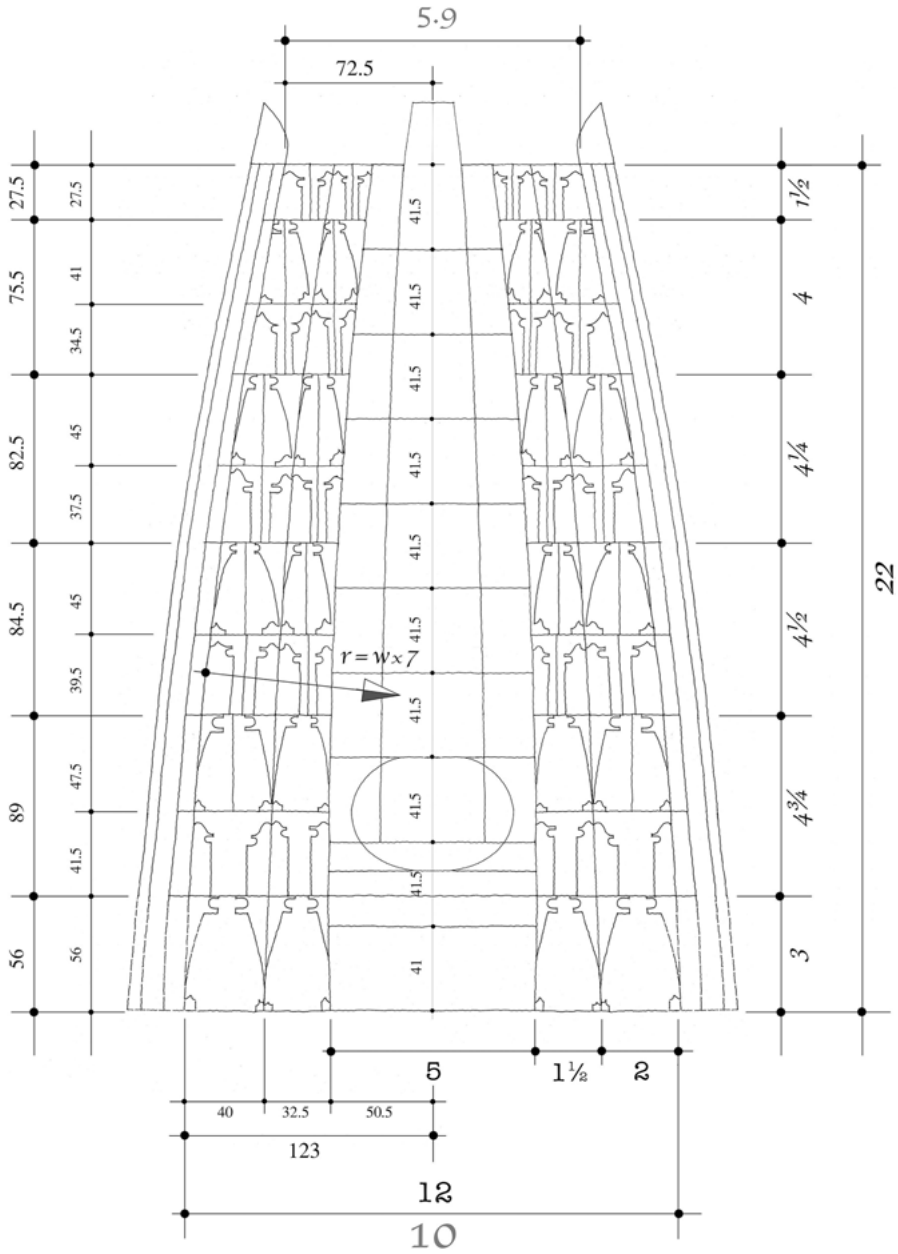


Plate 9.7: Measured re-drawing of an eleventh-century line drawing engraved on rocks at Bhojpur, Madhya Pradesh, representing a Bhūmija temple tower similar to the Malayādri type of the Samarāṅgaṇasūtradhāra. The engraved drawing shows only the half to the right, which has been mirrored on the left to show the complete elevation. Measured dimensions in cm are shown on the left. The other numbers show an analysis in terms of modular proportions (parts, *bhāgas*).

in the reentrant angles of a stellate plan, of small, pointed projections carrying embedded *kūṭastambhas* (miniature *śikharas* on pilasters, like those of the main projections). These are the equivalent of the *nandikās* in complex Nāgara temples. The text mentions only recesses (SSD 65.113).

*kathyate śataśṛṅgo'tha prāsādaḥ (śubhalakṣaṇaḥ) |
vallabhaḥ sarvadevānām (śi)vasya (tu) viśeṣataḥ || 109 ||*

Now the Śataśṛṅga temple, having beautiful features, is going to be explained.
It is beloved of all the gods, especially of Śiva.

*caturaśṛṅkte kṣetre viṃśatyakonayānśike |
karṇādvi(rdha)sūtreṇa tato vṛttam atra prakalpayet || 110 ||*

In a square field, subdivided into 19,
One should then make a circle with a *sūtra* (cord) half the *karṇa*
[i.e. the radius is half the diagonal, so this is the circle circumscribing the original square]

*karṇā dvibhāgikāḥ kāryāḥ śālā syāt pañcabhāgikā |
śālāpallavikā cāsya (nirgatā) vṛttamadyataḥ || 111 ||*

The *karṇās* (corner projections) should be made as two *bhāgas*; the *śālā* (central element) should be five *bhāgas*.

Its *śālāpallavikā* (miniature shrine at the base of the *śālā*) projects from the middle of the circle (i.e. on the cardinal axis).

*dvau dvau pratirathau kāryau dvibhāgāyāmvistṛtau |
parivartanato vṛttamadyatā(taḥ) koṇaśālayoḥ || 112 ||*

Two by two *pratirathas* (intermediate elements) should be built, being two *bhāgas* in breadth and depth,
And should be made between the *śālā* and the *koṇa* (*karṇa*, corner) by going round the circle.

*śālākoṇapratirathāntareṣu syāj jalāntaram |
ekonaviṃśatiṃ bhāgān tām bhajet daśabhiḥ punaḥ || 113 ||*

In the intervening spaces between the *pratirathas* and the *śālā* and *koṇa* should be a recess (*jalāntara*),

One should further divide the 19 *bhāgas* into ten.

*garbhaḥ prāgavat tathā bhittiḥ prāgvat khuravaraṇḍikā |
jaṅghotsedho(tha) bhūtsedhaḥ pūrvavac chikharocchritiḥ || 114 ||*

The *garbha* is as before, and so also the wall and the *khura* and *varaṇḍikā* are as before.
The height of the *jaṅghā* ('thigh', wall), the height of the storey and the height of the *śikhara* are just as before.

*(athābhiste?)merārabhya paṭṭyantaṃ śikharocchritiḥ (tim) |
bhāgānām aṣṭaviṃśatyā(?) vibhajet pādāhīnayā || 115 ||*

Then, starting from the first storey¹⁵ up to the *paṭṭī* (the *vedī*), one should subdivide
The height of the *śikhara* into 28 *bhāgas* minus a quarter (27%).

15 Translator's note: Assuming *athādibhū* for *athābhiste*.

*dvitīyabhūmikā tasya kāryā pañcapadocchritā |
rekhās tu pañca kartavyāḥ padapādocchritā bhuvāḥ || 116 ||*

Its (i.e. the temple's) second storey should be built five *padas* (parts, *bhāgas*) in height. One should build five *rekhās* (i.e. five lines demarcating the tops of the remaining storeys); the storeys should be [successively] one quarter of a *pada* less in height.

*sārdhabhāgocchritā vedī pravidheyāsya tadvidā |
śālāsya stambhakūṭādibhaktayaḥ śukanāsikā || 117 ||*

He who knows about these things should make its *vedī* one and a half *bhāgas* high. Its *śālā*, the subdivisions of the *stambha*, *kūṭa* and so forth, and the *śukanāsikā*,

*rekhādyaṃ ca kumbhasya prāgvat syāt sarvaṃ apy adah |
śataśṛṅgam imaṃ kuryād yaḥ prāsādaṃ manoramam || 118 ||*

All that, beginning from the profile (*rekhā*) of the *kumbha*, should be just as before. Anyone who were to build this beautiful Śataśṛṅga temple,

*tasyaikaviṃśatikulā ++++++ |
kartā kārayitā ceti dvāv etau jagatām prabhoḥ || 119 ||*

For him, twenty-one clans [. . .]

The builder and the one who causes him to build, both of them would surely become masters of the world,

tripuradveṣiṇaḥ syātām niyatām gaṇanāyakau |

Leaders of the *gaṇa* [mythical dwarf] hosts of the Lord of the Universes, the enemy of the Three Towns.

(from SSD 65, translation by Mattia Salvini)

The sequence of Bhūmija stellate plans follows the subtle logic of a particular system of geometry, referred to in the text as *parivartanā*. A cryptic instruction relating to one of the stellate plans presented in the SSD led me to pursue this,¹⁶ and it turns out that the number of *bhāgas* into which the initial square of the plan is subdivided is not arbitrary. Each of those numbers yields a small circle with a diameter corresponding to a whole number, or number with simple fraction (1½, 2¾ etc.), of those same *bhāgas*, a given whole number of which, touching one another like a string of beads, can be placed around the circle circumscribing the initial square or one of the other associated large circles. It can be demonstrated that the mathematical inaccuracies of this phenomenon in a drawing are so small as to be imperceptible. Drawing the plan of the Śataśṛṅga from the instructions in the SSD produces a star with 28 points, not (giving a point on each cardinal axis) 32 points, as one might guess. As we have seen, the initial plan square of 10, is to be re-divided into 19. Around the circum-circle of the initial square will go 28 small circles with a diameter measuring three of those 19 *bhāgas*.

¹⁶ The exploration of the *parivartanā* principle was done in collaboration with Paul Glossop. See Adam Hardy, *Theory and Practice of Temple Architecture in Medieval India: Bhoja's Samarāṅgaśū-tradhāra and the Bhojpur Line Drawings* (New Delhi: Indira Gandhi National Centre for the Arts with Dev Publishers, 2015): 260–64 and 278–83 (Appendix 3 by Paul Glossop).

A superb example of the type represented by the Śataśṛṅga of the SSD is found in the Udayeśvara (or Nilakaṅṭheśvara) temple, Udayapur, dedicated in 1080 by Paramāra king Udayāditya. With a photogrammetric model we can show that a star of 28 points is indeed the basis of the plan (Plate 9.8). Following the instruction to re-divide the temple width by 19 (Plate 9.9), the corner element is plausibly two of those, and the central *śālā* just a touch over the prescribed five, no doubt to avoid an extra-wide recess either side. These proportions are taken at the *khura* (hoof) of the moulded

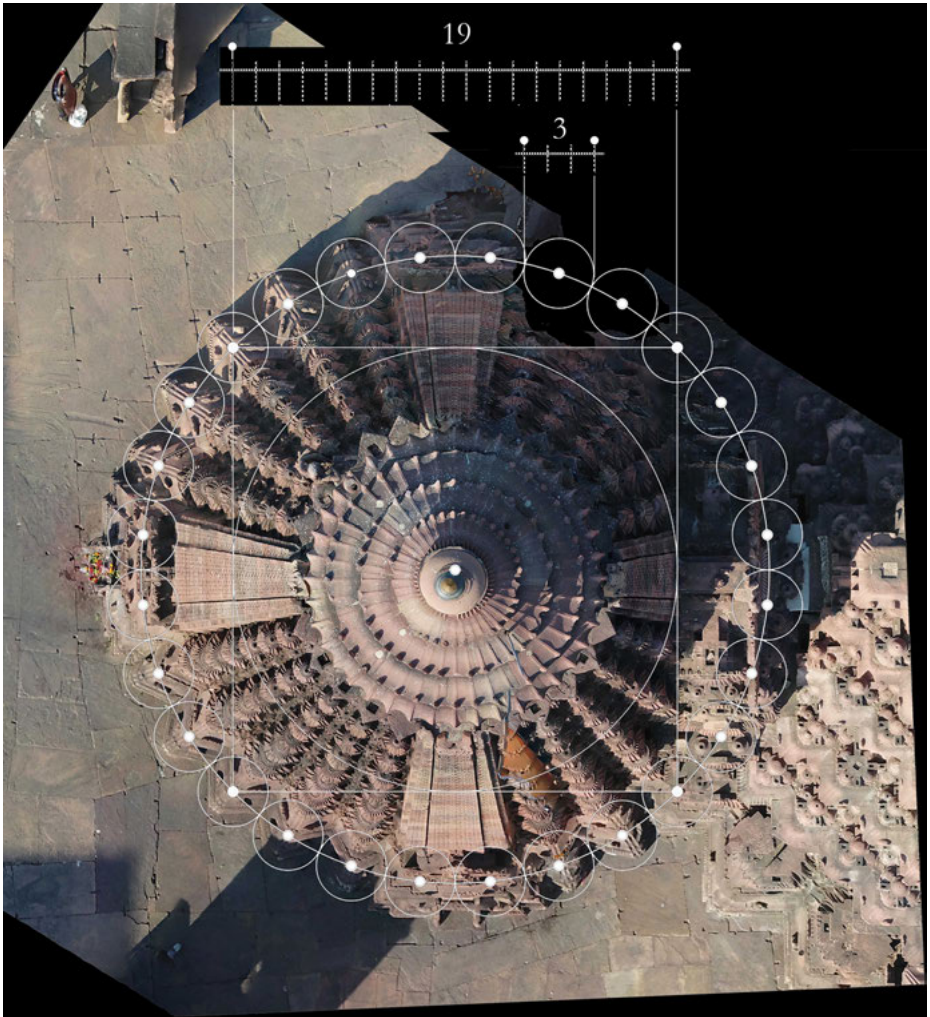


Plate 9.8: Udayeśvara temple, Udayapur, Madhya Pradesh, 1080 CE. Analysis of plan based on photogrammetric model by Kailash Rao, showing how it is based on a 28-point star constructed by *parivartanā* ('going around the circle').

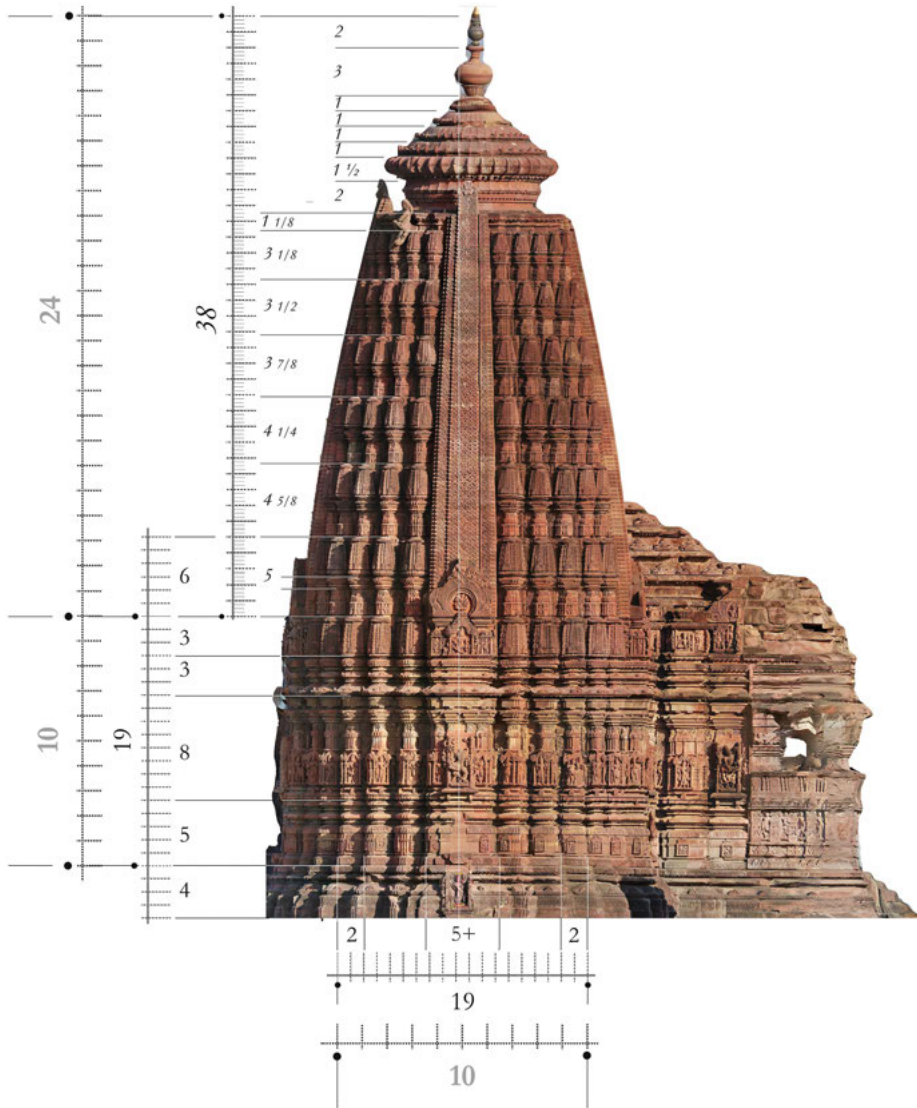


Plate 9.9: Udayesvara temple, Udayapur, elevation. Analysis, based on photogrammetric model by Kailash Rao.

base (*vedibandha*), as the supporting platform or sub-base (*pīṭha*), omitted in the text, is not counted.

Turning to the elevation (Plate 9.9), and drawing a centre-line, one surprise is that the perfect-looking monument is not quite vertical (the central point in Plate 9.8 is not directly over the finial), but not so far out as to invalidate our analysis. In terms of the ten parts of the temple width, the first *bhūmi* is also ten, and the remaining height of

the temple 24, giving a much more slender superstructure than in the SSD. Rather satisfactorily, the divisions of the first *bhūmi* are apportioned, just as in the plan, by re-dividing the ten *bhāgas* into 19: five for the base, eight for the *stambha* ('pillar' in the wall), three for *chhādyā* canopy plus *varaṇḍikā* mouldings, three for the *kūṭa*. The height of the sub-base is four of the same size of *bhāga*, and the second *bhūmi* six. In the superstructure, the textual rule that each *bhūmi* height should be divided equally between pillar (*stambha*) and *kūṭa* is observed. Thus, the *kūṭa* height of the second *bhūmi* is three *bhāgas*, the same as in the first *bhūmi*.

As in the text, a new subdivision is made from the second *bhūmi* upwards, but all the way to the summit rather than just to the top of the *vedī*. The height of 24 original *bhāgas* is re-divided into 38. Of these, the second *bhūmi* takes up five; so five of these new *bhāgas* equal six of the previous ones. Those five are equally divided between *kūṭa* and *stambha*, the latter having $1\frac{3}{4}$ and $\frac{3}{4}$ allocated respectively to the shaft and the moulded portion. These divisions correspond to horizontal joints in the heavy stone blocks, and subsequent *bhūmi* heights would have been re-divided by five to measure out their courses of masonry. The remaining *bhūmis* are $4\frac{5}{8}$, $4\frac{1}{4}$, $3\frac{7}{8}$, $3\frac{1}{2}$, $3\frac{1}{8}$ *bhāgas*, with $1\frac{1}{8}$ for the *vedī*. While the text encourages us to look for reduction by one quarter at each successive stage, here we have $\frac{3}{8}$ each time, a quicker diminution as well as a loftier tower.

Of the ten-part temple width, the shoulder (*skandha*) platform over the *vedī* is six, as prescribed by the SSD. In the text, the crowning *ghaṇṭā* and all its attendant parts are proportioned by a *bhāga* of their own, related to this *skandha* width. Here, the remaining *bhāgas* of the 38 regulate the heights of these elements perfectly. One further detail is perhaps significant. At the very summit is a finial (*bijapūraka*) made of metal, which looks original. It has a golden tip, tapering to a point, that sits above the line delimiting the 38 *bhāgas*, and the 34 larger *bhāgas* of the whole temple. Beyond measure, might it be an *ākāśa-liṅga* (emblem of Śiva in its ethereal state), preceding the world of manifest form?

The architects working on the theory and the practice of making Bhūmija temples seem to have been conscious of creating a new, distinct and, perhaps for them and their patrons, a superior tradition. This tradition, no more than any other, did not begin with a text and then build. The architectural forms were created as the crafts workshops became established. The authors of the Bhūmija chapter of the SSD developed a typology and system, grappled with the geometrical, numerical and sequential implications, and thought through untried possibilities. Practitioners (probably including the same group of people) realised those possibilities in practice, and, more often, made variations on the well-tried ones and, in their best works, improved them.

5 Flights of Imagination

Lastly, let us look at two temple designs that do not form part of a set or a sequence, but are each in their own way unique. The Navātmaka temple of the SSD (Plate 9.10) is presented in chapter 56, after the Keśarī series discussed earlier in this paper. That series, in the SSD's version, while it is not abreast of the sophisticated and more standardised Nāgara types yet to emerge, is notable for its inventiveness in combining already-known composite temple types into a greater whole, a concept characteristic of the tenth century in the Nāgara tradition. The Navātmaka, as an exploration of how to take this game even further, is a *tour de force* of imagined possibilities.

*catuṣṣaṣṭikare kuryāt kṣetre mānaikaviṃśatiḥ(?) |
saptavargapado garbho bhittiyā saha vidhīyate | |269 | |*

One should build in a field of sixty-four *karas* (cubits?), with a measure of twenty-one (parts, *bhāgas*);

The sanctum (*garbha*) is enjoined in the *pada* (part, *bhāga*) of the seventh row (i.e. is seven parts square), together with the wall.

*syād garbhabhittir bhāgena bhāgenaivāndhakārikā |
ṣaḍbhāgaṃ karṇavistāraṃ daśadhā pravibhājayet | |270 | |*

The wall of the *garbha* should be one *bhāga*, and the ambulatory (*āndhakārikā*) one *bhāga*.¹⁷

One should (re-)divide the width of the *karṇa*, being six *bhāgas*, into ten.

*ṣaḍbhīr bhāgair bhaved asya garbho bhittiyā samanvitaḥ |
bāhyā bhittir bhaved bhāgād bhāgas caivāndhakārikā | |271 | |*

Its *garbha* (i.e. the *garbha* of the *karṇa*, which becomes a *prāsāda* in itself) should be six *bhāgas*, endowed with a wall.

The outer wall (of this corner *prāsāda*) should be one *bhāga*, as also the *andhakārikā*.

*dviḥbhāgaṃ karṇavaipulyam udakāntarabhūṣitam |
śeṣo bhadrasya vistāraś caturthāṃśavinirgataḥ | |272 | |*

The width of the *karṇa* should be two *bhāgas*, adorned with a recess (*udakāntara*).

The remainder (*śeṣa*) has the width of the *bhadra*, projecting at the fourth *aṃśa*.¹⁸

*kṣobhayed ardhabhāge tu tadardhena jalāntaram |
mattavāraṇakair vidyāt stambhair upari śobhitāḥ | |273 | |*

One should stir (?) in half a *bhāga*, and the recess (*jalāntara*) should be half of that.¹⁹

Above, beautified by *mattavāraṇakas* (=?) and pillars, one should know that

*rathikaikā tribhāgena punaḥ sārhadvibhāgikā |
tāsāṃ parasparakṣepo bhāgo bhāgo vidhīyate | |274 | |*

¹⁷ This is rather a notional ambulatory as it is surrounded by a great, wide interior space.

¹⁸ This is unclear: projecting 4 *aṃśas* would work, but this is contradicted by verse 279.

¹⁹ Assuming that the width of the *garbha*+wall gives the *bhadra* width, which would be typical, one *bhāga* is left between *bhadra* and *karṇa*, so this line seems to mean that you add half a *bhāga* to the sides, or else, perhaps, add half a *bhāga* of embedded side projection: either leaves us with half a *bhāga* for the *jalāntara*.

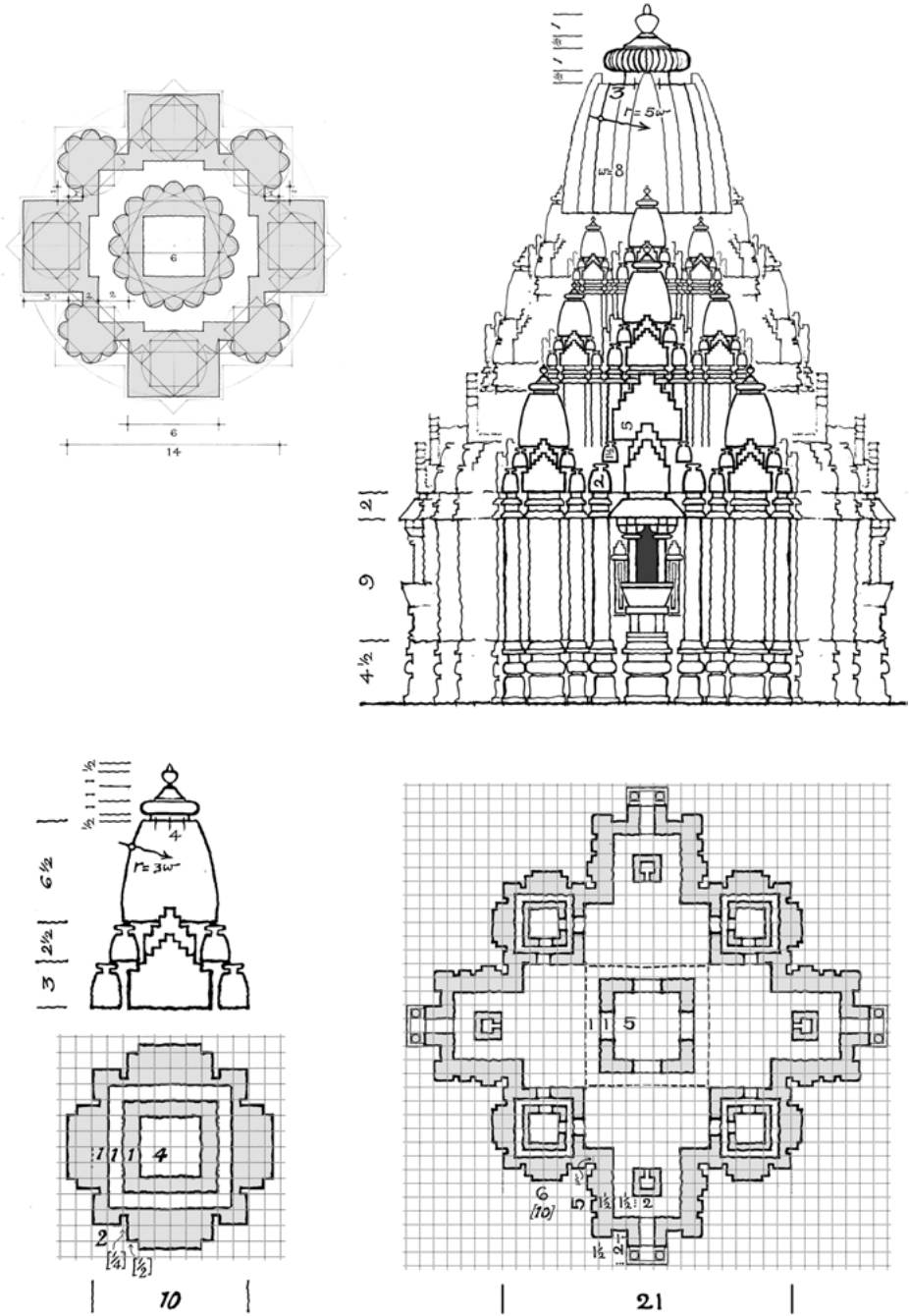


Plate 9.10: Two unusual temples drawn from the Samarāṅgaṇasūtradhāra: the Navātmaka from chapter 57 and the Puṣpaka (plan only, top left) from chapter 56.

One *rathikā* (miniature *sikhara*, equivalent of AP's 'srnga') is in three *bhāgas*, and again (up one level) two *bhāgas* and a half.

Their mutual thrust is enjoined as one and one *bhāga*.²⁰

śeṣaṁ śikharavistāraḥ sārḍhaṣaṭkaṁ taducchrayaḥ |

pr̥thaksūtrais triḡuṇitair veṇukoṣaṁ samalikhet | 275 | |

The remainder has the width of the *sikhara* (i.e. the *sikhara* takes up the remaining space), while its height is six and a half.

With separate *sūtras*, made threefold, one should draw the *veṇukoṣa*.

[Draw the curvature of the *sikhara* with a cord with a radius three times the width.]

skandhakośāntaram bhāgaś caturbhis tasya bhājayet |

gr̥ivārdhabhāgam utsedho bhāgenāmalasārakam | 276 | |

One should subdivide the distance across the shoulder (*skandhakośa*) into four *bhāgas*.

The *gr̥iva* (neck) should have a height of half a *bhāga*, the *āmalasāraka* (ribbed crowning element) should be one *bhāga*.

padmaśr̥ṣasta(r̥ṣaṁ ta)thā bhāgaṁ kalaśo bhāgasammitaḥ |

ardhabhāgasamo(mu)tsedhaṁ kārāyed bījapūrakam | 277 | |

The *padmaśr̥ṣa* (lots moulding) should be one *bhāga* and the *kalaśa* (pot) should measure one *bhāga*.

One should make the *bījapūraka* (finial) with a height of half a *bhāga*.

sarvakarṇeṣu kartavyāḥ kriyāś caivaṁ vicakṣaṇaiḥ |

Such procedures should be applied to all the *karṇas* by the expert.

(from SSD 56, translation by Mattia Salvini)

Although it has not yet been named, a 'Sarvatobhadra' shrine (Plates 9.1, no. 2) has now been created on each corner. Next, a Valabhī shrine is to be constructed in the middle, following the original *bhāga* size. Unusually, the height of the *garbha* within the Valabhī is specified; as this is only three *bhāgas*, it seems that the Valabhī encases a small, freestanding shrine, sitting within the interior space of the temple. Having created the Valabhī, we are instructed to place two Sarvatobhadra shrines 'above and above', and then to place two Sarvatobhadra shrines in each *karṇa*. One of these has already been placed there, and that 'two' means 'two more' has to be deduced from the width of the uppermost, main *sikhara* form, given as eight.

diksūtrabāhyabhāgeṣu valabhīm s of | 278 | |

In the external *bhāgas* of the directional *sūtra* (cardinal axis), one should place a Valabhī.

nirgame pañcabhāgaḥ syāt tiryak prakṣiptabhāgikāḥ(?) |

asyā dvibhāgiko garbho mādhye bhāgatrayocchritaḥ | 279 | |

It should be five *bhāgas* in projection, with *bhāgas* strewn transversely.²¹

At its centre, the *garbha* should be two *bhāgas*, and three *bhāgas* high.

²⁰ This seems to mean the setback of the second level from the edge of the first, i.e. the projections in the second tier sit over the centre of the one below, thus set back by one *bhāga*, and so on upwards.

²¹ Perhaps this means simply that the width is the number of *bhāgas* that result from what has already been given.

*bhāgārdhabhāgaṃ bhittiḥ syāt tatsamā cāndhakārikā |
tasyās cāgre vidhātavyaḥ(?) ṣaḍdārukasamanvitam | 280 | |*

The wall should be one *bhāga* and a half, and the *andhakārikā* (ambulatory) should be the same as that.

On its top one should build [. . .] endowed with six *dārukas* (=?).

*ekaikāṃ rathikāṃ sārdbabhāgāṃ karṇeṣu yojayet |
śeṣaṃ bhadrasya vistāro bhāgaḥ syād asya nirgamaḥ | 281 | |*

One should join to (i.e. place on top of) the *karṇas* one *rathikā* each, being one and a half *bhāgas* (wide).

The remainder (i.e. the pediment of the Valbhī) has the width of the *bhadra*; its projection should be one *bhāga*.

*evaṃ bhadraṃ vi(dvi) bhāgaṃ syāt stambhadvayasamanvitam |
valabhāvartayor madhye bhāgam ekaṃ ca viśṭṛtam | 282 | |*

Thus, the *bhadra* should be two *bhāgas* [in projection], endowed with two pillars.²²

Between the *valabha* and the *āvarta* [i.e. between the *bhadra* and the corner of this Valbhī shrine], extending for one *bhāga*,

*tatrodakāntaraṃ kuryād guṇadvāravibhūṣitam |
navabhāgocchritā jaṅghā pīṭham asya tadardhataḥ | 283 | |*

One should build a recess (*udakāntara*), adorned by a niche (*guṇadvāra*).

The *jaṅghā* should be nine *bhāgas* high, its base (*pīṭha*) should be half of that.

*mekhalāntarapatre ca kuryād bhāgadvayonmite |
rathikā syād dvibhāgā ca tataḥ sārdbaikabhāgikā | 284 | |*

One should moreover build the two *mekhalāntarapatras* (*varaṇḍikā* mouldings) with a height of two *bhāgas*.

The *rathikā* should be two *bhāgas*, and then [at the next level] one *bhāga* and a half.

*śeṣaṃ śikharavistāraḥ pañcāṃśaṃ śikharocchrayaḥ |
uparyupari kartavyaṃ sarvatobhadrakadvayam | 285 | |*

The *śeṣa* should have (i.e. ‘the portion left over determines’) the width of the *śikhara*; the height of the *śikhara* is five *aṃśas*;²³

Above and again above one should build two Sarvatobhadras.

*dve dve ca sarvatobhadre karṇe karṇe niveśayet |
diksūtreṣu samasteṣu kriyāṃ evaṃ prakalpayet | 286 | |*

Moreover, one should place two Sarvatobhadras in each corner (*karṇa*).

In all the directional *sūtras* one should conform to this procedure.

21 Perhaps this means simply that the width is the number of *bhāgas* that result from what has already been given.

22 ‘Thus’ presumably because it is normal for the pediment to project half as much as the *bhadra* that it sits over.

23 *Śikhara* here means a pediment (termed ‘*simhakarṇa*’ in this text), i.e. a Valbhī-type pediment, because this central element is a Valbhī.

vistāra śikharasyaṣṭau bhāgātsyārdhasamucchrayaḥ(?)|

pañcavyāseṇa sūtreṇa ++++++ | |287| |

The width of the *śikhara* should be eight *bhāgas*, and a half (?) [perhaps 9½] in its height.

With a *sūtra* extending for five [times the width, one should draw the profile].

veṇukośāntaram cāsyā tribhir bhāgair vibhājayet |

grīvā ca padmaśīrṣaṇi ca bhāgena syād idam dvayam | |288| |

One should subdivide the interstice of its *veṇukośa*²⁴ into three *bhāgas*.

The *grīva* (neck) and the *padmaśīrṣa* (lotus moulding) should be one *bhāga*; for these two,

pratyekaṁ bhāgikau kāryau kalaśāmalasārakau |

ta(na) vātmako'yaṁ kathitaḥ prāsādas tridaśālayaḥ | |289| |

A *kalaśa* (pot) and *āmalasāraka* (ribbed crowning element) should be built, being one *bhāga* each.

This temple is called *Navātmaka*, the Abode of the Thirty.

(from SSD 56, translation by Mattia Salvini)

Beyond the usual need to work out all the mouldings and ornamental details not mentioned the text, these instructions bring many challenges for someone setting out to build such a temple: how to fit the primary elements together elegantly, how to treat the deep flanks of *bhadras* described entirely from in front; and, not least, how to build such a structure, and how to arrange the beams in a great ambulatory space that has no precedent. The example of the *Navātmaka* temple shows how a text, rather than providing a recipe to be copied unthinkingly, might, in offering imaginative ideas that would demand skill and further invention in order to be realised, be a catylist for the creation of wonderful architecture.

The SSD is particularly rich and varied, and my other example of an architectural dream in words, which I can describe only briefly here,²⁵ is also from that treatise. It is the *Puṣpaka* ('Flower') temple (SSD 57.141–172), probably not even expected to be built, but conceived architecturally, poetically, and metaphysically. The instructions for the *Puṣpaka* luxuriate in flowery poetry. For example, the wall of the temple should be adorned with 'a garland of celestial maidens (*vidyādhari māla*) with flowers in their hands' (*mālā vidyādhari kāryā puṣpahastair alaṅkṛtā* | : SSD 57.152). Many technical terms for temple architecture already have flower-like etymology: *śṛṅga* ('sprout'), *kanda* ('bulb') *mañjari* ('blossom'), and so on. Here the floral characteristics of a temple blossom in profusion. The plan (Plate 9.10, upper left) is an extraordinary conceit, based on a square rotated to form an eight-point star, with a sixteen-lobed sanctum (*kanda*) within (with sixteen *patras*, literally 'leaves'), surrounded by an ambulatory passage. After making eight 'corners' (*karnas*), each eight-lobed (with eight *dalās*, petals), we are instructed to create massive cardinal projections (*bhadras*) which completely obscure four

²⁴ *Veṇukośa* is usually the side profile of the *śikhara*, but here it means the shoulder width, or 'skandhakośa'.

²⁵ Adam Hardy, *Theory and Practice of Temple Architecture in Medieval India: Bhoja's Samarāṅgaṇa-sūtradhāra and the Bhojpur Line Drawings* (New Delhi: Indira Gandhi National Centre for the Arts with Dev Publishers, 2015): 156–62.

of the petalled ‘corners’. All becomes clear when it is announced that ‘The arrangement of the ground plan for the Puṣpaka should be in the shape of five flowers’ (*puṣpakasya talanyāsaḥ pañcapuṣpākṛtir bhavet*: SSD 57.149). Four of the nine are intended to be hidden. A little later comes a reference to the ‘subtle corners’, no doubt to distinguish these from the gross ones that are visible:

*va(ma)rālagrāsa(ha) makaraiḥ puṣpavidyādhair api |
sūṣmakarṇasamākīrṇā cāsya jaṅghā vidhīyate | |155| |*

With geese (*varāla*) gorgon-faces (*grāsa*), *makaras*, and with celestial flower beings (*puṣpavidyādhair*), Its *jaṅghā* is to be built overspread with (on?) subtle *karṇas*.

(from SSD 57, translation by Mattia Salvini)

Those parts of the emanating cosmic body are not just embedded but entirely subsumed, somewhere between formlessness and form, as yet unmanifest.

6 Conclusion

In our concern to rescue the freedom of expression and individual creativity of artists from another age and world, are we in danger of imposing a modern worldview, perhaps even a late capitalist one? Again, it is worth citing research on contemporary south Indian temple-making practices, conducted by Samuel Parker, who aims ‘to show how they can contribute to a more adequate understanding of ancient South Asian monuments and their aesthetic qualities’:

Without such concrete [ethnoarchaeological] evidence, a contemporary historical imagination, by default, is understandably liable to represent the past as a series of discontinuous, creative innovations produced by individualised creative agents. Even where the names of such agents have not been preserved, as in the case of ancient India, their cosmogonic function is still likely to be presumed in narrative forms that portray discrete temporal discontinuities as primary signifiers of value. However, the rituals of temple production in South India function as a mode of creative practice that diverges profoundly from modern economic mythologies including those of creative personhood (‘possessive individualism’) and intellectual property rights. While these are presently becoming universalised and naturalised through the forces of globalisation, they affect, but do not organise, contemporary practices of temple production.²⁶

It is not to deny the agency or worth of temple designers in the past to recognise that their creative genius was collective, not only in the necessarily collaborative creation of a temple, extending far beyond architects, but also in the collective creation of complex architectural languages with inherent possibilities rolled out across centuries. If making a temple was not self-expression but a ritual act, in that context, a text would

²⁶ Samuel K. Parker, “Ritual as a Mode of Production: Ethnoarchaeology and Creative Practice in Hindu Temple Arts,” *South Asian Studies* 26, no. 1 (2010): from the Abstract.

evoke a sense of the divine in a far more subtle and dynamic way than merely proclaiming changeless canons. The textual injunctions call for invention and improvisation, but not towards an arbitrary end. They would relieve individual architects of certain decisions and stimulate results they could never have thought of alone. An artist would participate and act in a seemingly miraculous process, as if the temple were *svayambhū* or self-creating, emerging from a supra-human source.

Architects had to know *śāstra*, the body of knowledge through which they exercised their calling. Some may not have known any *śāstras* even if they knew Sanskrit; but *śāstras* would certainly have helped to transmit *śāstra*, imbibed through the mnemonic effect of verses as the hand drew. Standard temple types became ubiquitous not because of texts, though reinforced by them. The authors of these texts made inventories, and inventions too; they could only provide frameworks, but catalysed creativity and themselves created. Different kinds of text, nearer or further from practice, probably reflect different kinds of authorship, some more architectural, some more priestly, even some more courtly. More architectural texts illuminate and reflect the architectural world and thinking from which they stem. Even the more abstract ones are part of a broader world and way of thinking that temples embody. One way into that world is to draw designs that words in texts convey. This process provides a solid basis for exploring the question of whether temple architects in medieval India were bound by texts. It would be easy if we could simply say that they had to follow texts, which laid down very strict rules; or that these texts were abstrusely theoretical and nothing to do with practice. The answer is more complicated and so much more interesting.

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