

ANGKORIAN ARCHITECTURAL CERAMICS FROM THE KHMER TEMPLE AT PHIMAI IN NORTHEAST THAILAND

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ABSTRACT

Architectural ceramics were a crucial component of Khmer architecture from the earliest times. This paper focuses on the potential of such ceramics, particularly decorated roof tiles, to provide information about Khmer architecture and political expansion. Architectural ceramics recovered from a recent excavation at Prasat Hin Phimai, Northeast Thailand, are discussed in this context.

The Royal Palace, as well as official buildings and homes of the nobles, all face east. ... The tiles of the central dwelling are of lead; other parts of the palace are covered with pottery tiles, yellow in colour. ... The dwellings of the princes and holders of high office are wholly different in size and design from those of the people. The family temple and the main hall are covered in tiles; all the outlying buildings are thatched with straw. Straw thatch covers the dwellings of the commoners, not one of whom would dare place the smallest bit of tile on his roof. (The Chinese traveller Chou Ta-Kuan [1993:5] describing Angkor in AD 1296).

The Khmer civilisation of Angkor, which dominated much of Mainland Southeast Asia during the 9th to 15th centuries AD, is best known for its stone architecture and sculpture. Yet architectural ceramics such as roof tiles and decorations were significant components of Khmer architecture from the earliest times. Even the stone temples, such as Prasat Hin Phimai in Northeast Thailand, have roofs which imitate ceramic tiles laid over a wooden frame (Boisselier 1966; Guy 1989:19).

Khmer architectural ceramics have been recorded from many sites (e.g., Groslier 1981:18; Guy 1989:19; Nakao 1992; Nakagawa 1997:139), but relatively little detailed analysis of them has been undertaken. This paper discusses the ceramic tiles and roof decorations from a recent excavation at Prasat

Hin Phimai, shows how these artefacts provide new information about the development of Khmer architecture in the region, and focuses on the potential of architectural ceramics as another means of understanding the development of the polity of Angkor.

Khmer architectural ceramics were first analysed in detail in the 1920's and 1930's (Silice and Groslier 1924; Parmentier 1935). The most comprehensive study remains that of Dumarçay (1973), which was based on finds from sites such as Banteay Srei and the royal palace of Angkor Thom, and also from Preah Vihear and Wat Phu. This work was extended by Pottier's (1994) analysis of roof tiles from the temple of Prasat Phanom Wan, located in Northeast Thailand 30 km from Prasat Hin Phimai and dedicated in AD 1082. Pottier suggested that categorisations based on roof tiles from Angkor were not totally adequate to deal with examples from Northeast Thailand. Indeed, it seems that roof tiles made north of the Dang Reak Range may have followed a slightly different sequence from those at Angkor.

Recently, an excavation was carried out at Prasat Hin Phimai as part of the Origins of Angkor Project, a joint undertaking of the Anthropology Department of the University of Otago, New Zealand, and the Royal Thai Fine Arts Department. During the Angkorian period the walled city of Phimai (ancient Vimapura) was a major regional centre and provided a succession of Khmer kings (Briggs 1951:178). A road more than 200 km long led directly from Angkor to Phimai, at the centre of which, facing back to Angkor, was the temple Prasat Hin Phimai. Construction of this temple apparently began during the reign of Jayavarman VI (AD 1080-1107), who was the first king of the Mahidharapura dynasty, a usurper legitimised by the priesthood at Angkor whose authority was probably only recognised in the north (Freeman 1996). The temple was dedicated to a Mahayanist deity in AD 1108 (Briggs 1951:181).

Prasat Hin Phimai was a crucial link in the chain of temples which provided a religious, economic and political structure for Angkorian authority. It was one of the largest of all the Khmer temples and the *prang* at Phimai may have been a forerunner for the design of the temple of Angkor Wat (Freeman 1996:76). Today, Prasat Hin Phimai is a historic park run by the Royal Thai Fine Arts Department.

In early 1998, a 4.0 x 7.0 m trench was excavated directly adjacent to the central sanctuary of the temple, which is the oldest remaining part of the complex. Together with other artefacts which will not be considered here, such as pottery, bricks and a small gold plaque, a total of 139.2 kg of unglazed ceramic roof tile fragments was found during the excavation. It is important to note that all surviving buildings at Prasat Hin Phimai are made of stone.

All tiles were found in the upper layers of the site, some in large pits. The tiles were fairly well fired in an oxidising environment, and were very pale brown (Munsell 10YR 8/3), light reddish brown (5YR 6/6), reddish yellow (7.5YR 8/6, 5YR 6/8) or reddish brown (5YR 4/4) in colour. Some had eroded laterite inclusions.

All tiles found were unglazed, in comparison to many recorded Khmer tiles (e.g., Plate 97 in Brown *et al.* 1977). Indeed, roof tiles from the late ninth century temples of the Roluos group, once Indravarman's capital of Hariharalaya, are the earliest of all glazed Khmer ceramics (Groslier 1981:18). While there is some evidence in Cambodia for a stylistic transition from early unglazed architectural fixtures, which were influenced by Indian prototypes, to more elaborate glazed forms (Rooney 1984:80), it seems more likely that the use of unglazed tile in Northeast Thailand was also a regional variant used as the Angkorian polity expanded into new provinces.

At Prasat Hin Phimai there were two major forms of roof tile typical of other Khmer sites (Boisselier 1966:364; Dumarçay 1973; Pottier 1994). Some are cap or cover tiles – *les tuiles couvre-joints* (Dumarçay 1973) – and have a semi-cylindrical cross section and a pointed protrusion on the interior surface (Figure 1). These protrusions were often found separately, broken from the body of the tile. A count of protrusions was made, which suggested that at least 50 – and undoubtedly many more – cap tiles contributed fragments to the excavation. Some cap tiles had grooves running across the interior surface as a result of a moulding method of manufacture. When in place, these cap-tiles would have covered trapezoidal flat channel tiles – *les tuiles canal* (Dumarçay 1973) – which are wider, flatter and taper to one end. These tiles generally have a semi-rectangular cross section and a ridge running across the exterior (bottom) surface (Figure 2), which would have rested on the wooden structure of the roof.

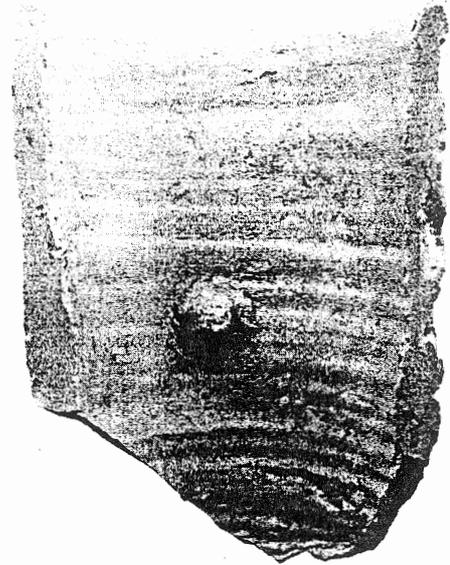


Figure 1: Cover tile from Prasat Hin Phimai showing internal protrusion (Catalogue No. 186). Maximum length, 16.6 cm.



Figure 2: Channel tile from Prasat Hin Phimai showing horizontal external ridge (Catalogue No. 8). Maximum length, 17.0 cm.

The channel tiles are most similar to the Type B tiles found at Angkor and Prasat Phanom Wan (see Dumarçay 1973; Poittier 1994). The cap tiles were incomplete and have tentatively been assigned to Type A. As cap tiles and

channel tiles tend to be about the same length, it seems the cap tiles might originally also have been about 20 cm in length.

While the sample of complete tiles is not large, and smaller tiles are more likely to survive whole, the Prasat Hin Phimai tiles do appear to have been relatively small. For example, one largely complete channel tile, measuring an estimated 17 cm in length, was not paralleled in Dumarçay's study, in which similar tiles measured 21-32 cm, nor at Prasat Phanom Wan where they were also at least 21 cm in length. Another example was a cap tile which was particularly narrow at 10.8 cm, in comparison to 12.5-20 cm in Dumarçay's study and at least 14.5 cm at Prasat Phanom Wan. So, while forms of the tiles appear analogous, there does appear to have been some difference in tile sizes between these sites. This may be a regional or temporal variation, but may also suggest a local manufacturing process which varied from site to site.

In addition to the tile fragments, an incomplete ceramic finial – *épis de faitage* or *ballalee/barali* – was recovered in the top layer of the site. It resembles those found in stone on the roof of the temple's central sanctuary. Shaped like a lotus bud (Figure 3), it is a reddish yellow cone measuring 9.7 cm in height with a diameter at the base of 5.8 cm. Several small grooves are visible around its circumference. It most resembles Type B tiles, examples of which were found at Angkor Thom (Dumarçay 1973:16), and also resembles tiles found at the kilns of the Khorat Plateau (Fine Arts Department 1989). Other large heavy ceramic fragments with relief bands in a "turned" shape were recovered at the top of the site and appear to be the remnants of somewhat larger finials.

Perhaps most significantly, a number of eave tiles – *tuiles d'about* (Dumarçay 1973) or *cabunchinchai* – were also found during the excavation. These are effectively cap tiles with the addition of a large decorated end plaque which embellished the edge of the roof with images of lotuses and "demon" or "guardian" faces (Figures 4 and 5). Lotuses are symbols of purity; according to Buddhist scripture "the spirit of the best of men ... is spotless, like the new lotus in the [muddy] water which does not adhere to it" (Frédéric 1995:62). The demon or guardian tiles represent ferocious semi-divine beings such as *yaksa* which are often found associated with Khmer architecture. They are sometime protectors of the Buddha and of Buddhist Law, a kind of genius of nature, and are often seen as temple guardians in Southeast Asia (Frédéric 1995:280).

Three partial demon face plaques were found in one large pit and three lotus pattern plaques in another. Fragments of lotus tile plaques were also found in the disturbed upper layers of the site. Only one complete end tile was recovered. This had a particularly simple lotus pattern on the end surface, and the body component of a similar tile, minus the plaque, was also recovered.

Various forms of lotus design eave tiles have also been found at Angkor (Dumarçay 1973) and Prasat Phanom Wan (Poittier 1994:299). The more complex examples found at Prasat Hin Phimai are most like examples from Prasat Phanom Wan (e.g., PWIT 34 [Poittier 1994]), although there is some

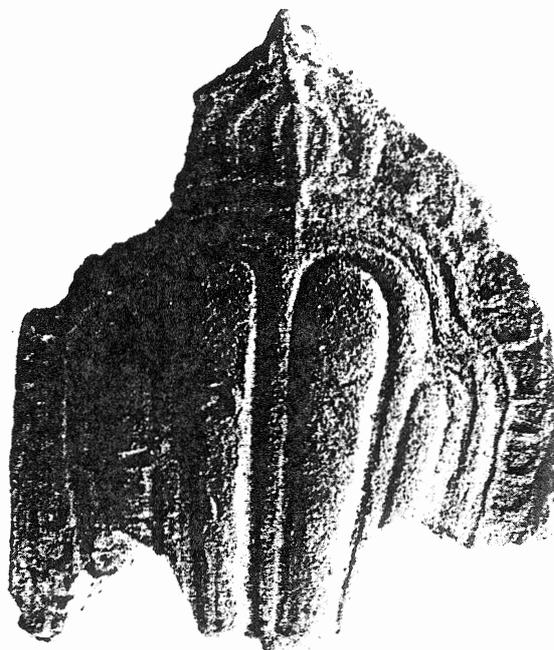


Figure 3: Lotus eave tile plaque from Prasat Hin Phimai (Catalogue No. 72). Maximum height, 13.3 cm.



Figure 4: Simple lotus eave tile plaque from Prasat Hin Phimai (Catalogue No. 194). Maximum height, 7.4 cm.



Figure 5: Guardian face eave tile plaque from Prasat Hin Phimai (Catalogue No. 36). Maximum height, 10.3 cm.

similarity with Dumarçay's type H which was found at Pre Rup and Wat Phu and thought to date from around the beginning of the 12th century. However, the lotus end tiles from Prasat Hin Phimai have two base notches which generally suggest a 10th-11th century date according to Dumarçay's scheme. Lotus designs can also be seen on the stone carvings at the base of Prasat Hin Phimai and at another major Khmer temple in Thailand, Prasat Phanom Rung, which was constructed in the early 12th century.

Demon face tiles are much rarer than other designs in Cambodia. One (undatable) example (Type S) was found in the north pond of the Royal Palace at Angkor (Dumarçay 1973). Quite different demon face tiles have been found in Northeast Thailand. Crudely sculpted examples, mounted both on tiles and ceramic insertion points, were found at Prasat Thanon Hak, another restored Khmer site in Nakhon Ratchasima province which has been dated to the end of the eleventh century (Poittier 1994:301). Fragments of apparently identical masks were found at the village of Ban Don Sawang in Buriram province, in a region where many pottery kilns were located (Fine Arts Department 1989:68, 73; Poittier 1994:301).

The examples from Prasat Thanon Hak and Ban Don Sawang are quite different from those found at Prasat Hin Phimai. However, demon face tiles were also found at Prasat Phanom Wan, and at least one is so similar (PWIT 1 [Poittier 1994]) that it could almost have come from the same mould. This has been called Type U by Poittier:

Le masque légèrement convexe accuse les lignes du relief très soigné représentant le visage d'un démon aux yeux globuleux portant une tiare de feuillages (Poittier 1994:301).

These tiles are quite different from those found at Prasat Thanon Hak, which were very pointed, made of a coarser paste and whose technique was "moins soignée", but equally represented a "démon dont la tiare" (Poittier 1994:301).

Such a comparison suggests a temporal difference between the tiles, but also raises the possibility that the Prasat Hin Phimai and Prasat Phanom Wan examples were prototypes copied at less important temples such as Prasat Thanon Hak. There is no clear comparison with examples found at Angkor, although the faces share the bulging eyes, furrowed brows, and "widows peak" crowns of the famous stone *yaksa* sculptures on the *naga* bridges of Angkor Thom. These complex examples date to the reign of Jayavarman VII, the late 12th-early 13th century (Jessup and Zéphir 1997:120).

Thus, the architectural ceramics from Prasat Hin Phimai once formed the roof of a wooden structure which was probably built in the later 11th century or early 12th century, around the time of the initial construction of the central sanctuary. They provide clues about the broader nature of the Khmer polity in terms of the production of architectural ceramics. Temple construction was a critical component of imperial expansion. Kilns at Angkor such as Phnom Kulen probably first emerged to satisfy local requirements, particularly of roof tiles, roof ridge finials and other ceramic architectural ornamentation (Guy 1989:16). By contrast, the kilns found in Surin and Buriram provinces in Northeast Thailand indicate a substantial ceramic industry associated with the territorial expansion and consolidation of the 11th to 12th centuries (Guy 1989:19).

There is in fact evidence of on-site tile manufacture at Prasat Phanom Wan (Poittier 1994:298), and the close proximity of kilns producing tiles and bricks to construction sites may have been common practice (Dumarçay 1973). Yet there is also evidence of a common source for at least some of the decorated end tiles used at Prasat Hin Phimai and Prasat Phanom Wan, probably the Buriram kilns. Such iconographic objects as eave-tiles created a distinctive and shared identity for buildings at sites scattered across the landscape, and thus visually reinforced the widespread (if diffuse) power of Angkor. The importance of the Buriram kilns, as large-scale producers of both pottery and architectural ceramics, should not be overlooked when examining the incorporation of the region into the Angkorian polity.

In conclusion, roof tiles are significant elements in Khmer architecture and aspects of their potential for study have been raised in this paper. Angkor was, "literally, heaven

expressed in stone" (Higham 1989:334), and ceramics also played a significant role in Khmer architecture. Roof tiles, particularly eave tiles, appear to be a possible means of dating through stylistic seriation. They provide information about regional stylistic variation, such as the apparent local preference for demon face tiles in Northeastern Thailand. They may even be able to clarify relationships between individual sites, such as Prasat Phanom Wan, Prasat Hin Phimai and Prasat Thanon Hak. Analysis of roof tiles also emphasises how the architectural histories of Khmer temples are more complex than might be thought from the often overwhelming extant stone buildings. Finally, roof tiles suggest the role that stylistically distinctive artefacts played in the Angkorian polity, something reinforced at Prasat Hin Phimai by the presence of one of the famous statues of the meditating god-king Jayavarman VII.

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