

# The Influence of the Environment on the Construction of Candi:

## A Study on Several of Ancient Kedah Candis

Muhammad Nu'man Mohd Nasir<sup>1&2,\*</sup> Zuliskandar Ramli<sup>2</sup>, Hamdzun Haron<sup>3</sup>,

Muhamad Shafiq Mohd Ali<sup>2</sup> & Mohd Fauzan Zuraidi<sup>2</sup>

<sup>1</sup> Department of History, Faculty of Arts and Social Sciences, University of Malaya, Kuala Lumpur, Malaysia

<sup>2</sup> Institute of The Malay World and Civilization, The National University of Malaysia, Bangi, Malaysia

<sup>3</sup> Centre for General Studies, The National University of Malaysia, Bangi, Malaysia

\*Corresponding author. Email: [numanmuhd@gmail.com](mailto:numanmuhd@gmail.com)

### ABSTRACT

The present study is an archaeological approach on several of the *candis* that have been unearthed in Kedah. These *candis* were associated with the Ancient Kedah, a polity that once located in the northern part of the Malay Peninsula. Archaeological surveys and literature study have been conducted on several of the *candis* such as at, Site 31 Permatang Pasir, Candi Kampung Baru Archaeological Site, Site 32/34 and Site 33 of Kampung Sungai Mas, Site 7, Site 12 and 13, Site 16, Site 17, Site 18, Site 19, Site 22 and Site 23 of Pengkalan Bujang. The location of the *candis* were built in location that today have become a Malay village, paddy field and some were built on top of a hill, while others were erected near a river. The surrounding environment played an important role in the construction of these ancient monuments. The builders have taken their surrounding besides Sanskrit texts as a factor in determining the suitable location of their *candi*.

**Keywords:** *Candi, Ancient Kedah, Lembah Bujang, Kedah, Protohistory.*

### 1. INTRODUCTION

Archaeological research conducted in Kedah have unearthed many intriguing structures, scattered in an area known as the Bujang Valley. The Bujang Valley is a modern terminology introduced by the Department of Museums and Antiquities in the 1970s to refer to the area where the Ancient Kedah port grew. It covers the area from Sungai Sala in the North, Mount Jerai, Merbok and Muda Area to Cherok Tokkun in Penang. Most of the sites excavated in Kedah were temples or were known as *candi* by the locals. The term *candi*, especially in Malaysia, is referring to the ancient Buddhist or Hindu temples, as to distinguish it with the modern temples respectively. Ancient Kedah is one of the Malay polities that existed before the establishment of the Malacca Malay kingdom in the 13th century AD. Based on the archaeological data and foreign written sources, especially written sources from India, China and Arab-Persia shows that the Ancient Kedah has existed since the 2nd century AD (Ramli et al., 2017).

The archaeological research in Kedah was begun in 1840s, initiated by James Low (Ladlay, 1849; Low, 1848, 1849, 1884), a British Officer in Penang before this field gradually expanding in time. Several scholars have focussed their intention in researching the *candi* of the Ancient Kedah. Remnants of a structure has been discovered on the peak of Mount Jerai as reported by Irby (1905), and it closely associated as a *candi*. Quaritch Wales (1940) have excavated nearly 30 sites in Kedah with the help of Dorothy Wales, over a span of 14 months. Besides them, other researchers such as Ivor Evans (1926, 1927), Nik Hassan Shuhaimi (Rahman & Yatim, 1992), Mohd Supian (Sabtu, 2002), and Zuliskandar (Ramli et al., 2011) also have conducted excavation and archaeological research on *candi* in Kedah.

### 2. METHODOLOGY

The research methods used in this study includes archaeological survey and literature study on past researches that have been conducted on *candi*. 13 sites

have been surveyed in this research, each of the site coordinates, surrounding environment and material used to build the *candi* were recorded (Table 1). The location of archaeological sites in Kedah can be refer to Figure 1.

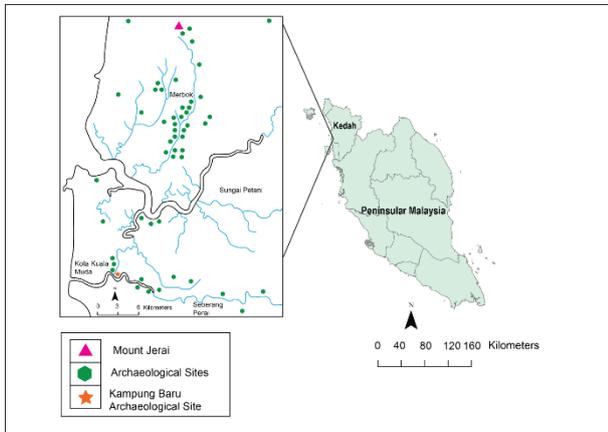


Figure 1 Location of archaeological sites in Kedah

### 3. RESULTS

Archaeological survey that have been conducted on several of the Ancient Kedah *candi* have been enabled us to identify characteristic of surrounding environment in the vicinity of these *candis*. Main characteristic of the surrounding environment is, whether a *candi* was built on a hill, near a river or surrounded by fertile soils that are used as to plant paddy today. The surrounding environment on each *candi* site that have been surveyed can be refer to Table 1. Some of the sites photograph can be seen from Figure 2 to Figure 7.

Table 1. Environment surrounding *candi* site and its building materials

Site	Environment	Building Material
Site 31 Permatang Pasir	<ul style="list-style-type: none"> <li>In vicinity of river</li> <li>Near paddy field area</li> <li>Mount Jerai in the background</li> </ul>	<ul style="list-style-type: none"> <li>Laterite</li> </ul>
Candi Kampung Baru Archaeological Site	<ul style="list-style-type: none"> <li>Near a river</li> <li>Near paddy field area</li> <li>Mount Jerai in the</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> </ul>

	background, constructed to face the mountain	
Site 32/34 Kampung Sungai Mas	<ul style="list-style-type: none"> <li>In vicinity of river</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> <li>Laterite</li> <li>Slate</li> </ul>
Site 33 Kampung Sungai Mas	<ul style="list-style-type: none"> <li>In vicinity of river</li> </ul>	<ul style="list-style-type: none"> <li>Laterite</li> </ul>
Site 7 Bukit Gajah Mati	<ul style="list-style-type: none"> <li>Located on a hill</li> <li>In vicinity of river</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> <li>Laterite</li> </ul>
Site 12	<ul style="list-style-type: none"> <li>Near a river</li> </ul>	<ul style="list-style-type: none"> <li>Laterite</li> </ul>
Site 13		<ul style="list-style-type: none"> <li>Bricks</li> </ul>
Site 16	<ul style="list-style-type: none"> <li>Near paddy field</li> <li>In vicinity of river</li> </ul>	<ul style="list-style-type: none"> <li>Laterite</li> </ul>
Site 17	<ul style="list-style-type: none"> <li>Located on a hill</li> <li>In vicinity of river</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> </ul>
Site 18	<ul style="list-style-type: none"> <li>In vicinity of river</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> <li>Laterites</li> </ul>
Site 19	<ul style="list-style-type: none"> <li>In vicinity of river</li> <li>Near paddy field</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> </ul>
Site 22	<ul style="list-style-type: none"> <li>In vicinity of river</li> <li>Mount Jerai in the background, oriented to the mountain</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> </ul>

	<ul style="list-style-type: none"> <li>Near paddy field</li> </ul>	
Site 23	<ul style="list-style-type: none"> <li>In vicinity of river</li> <li>Near paddy field</li> </ul>	<ul style="list-style-type: none"> <li>Bricks</li> </ul>



Figure 2 Location of Site 32/34



Figure 3 Location of Site 33



Figure 4 Site 23



Figure 5 A part of Site 22 structure



Figure 6 Candi Kampung Baru Archaeological Site



Figure 7 Muda River is located nearby Candi Kampung Baru Archaeological Site

## 4. DISCUSSION

### 4.1. River

Candi in Kedah have been unearthed in scattered location throughout the Bujang Valley. Some of the *candi* were erected near a river or other water sources. The selected location to be near a river or water source are a clear indication that the environment has its own influence in the construction of *candi*. Even though in Sanskrit texts especially the *vastu* and *silpasastra* also discussed the location of a temple should be near a water source for auspicious reasons, without a doubt other secular factors also played its role in determining temple location. Since prehistoric times in Kedah, areas located nearby riverbanks, estuary and in coastal area

have been selected as settlement, temporary first before becoming more permanent as time gradually past.

Areas nearby a river or coastal area were selected because of a few factors that its offer toward the people or community that chose it. They chose to inhabit areas close to the coast or estuary due to this area provides them with food, water, safety, communication, and transportation means. Rivers have been used by earlier communities to travel from one place to another, the invention of water transport made it easier for people at that time to move. Humans must move to perform various activities in life such as to find food, communicate with other groups and to trade. Trades also took place in the prehistoric times either with nearby groups of people or over relatively long distances. Muda River which is one of the main trans-peninsula routes that connect Kedah, Kelantan, Perak and Thailand has been active since prehistoric times apart from the existence of other small ports in the estuaries of rivers found in the Malay World in later period.

Trade in the prehistoric times was more of a system of exchange of goods (barter) between individuals or groups. The exchange of goods also occurs among groups of people who live in coastal areas or river with a group of people who live in the hinterland. Communities living near rivers or coastal areas need forest materials and products that can be supplied by the community that are living in hinterland, and vice versa. Trade activities between the coastal community and the inland community in Kedah continued until the formation of collection and exchange centres on the coast and in river especially at the Muda and Merbok River. The role of port and goods collection centre in Kedah becomes greater in the protohistoric times as Kedah was known as one of the busy trading centre in the Malay World. As the Ancient Kedahan actively engaged in trade activities, they tend to choose area that are nearby or in the vicinity of their economic activities to construct their *candi*. As can be seen in Figure 1, the likes of Pengkalan Bujang group of *candi*, Sungai Mas group, *candi* of Kampung Baru, Site 12 and 13 were constructed near a river. The Pengkalan Bujang group and Sungai Mas group were constructed in the area known as the main port of Ancient Kedah, and the Sungai Mas was also once, acted as the administrative centre for Ancient Kedah polity.

Among the tributaries that connect Merbok River are Sungai Pial, Sungai Merbok Kechil, Sungai Baharu, Sungai Siakap, Sungai Bujang, Sungai Kerisek, Sungai Terus, Sungai Petani, Sungai Tk. Wang Besar, Sungai Gelam, Sungai Batu Larangan, Sungai Pasir, Sungai Kerapu and Sungai Batu. Meanwhile, the tributaries that connect Muda River are Sungai Sedim, Sungai Ketil, Sungai Telok Nyior, Sungai Sunkop, Sungai Chepir, Sungai Jenin, and Sungai Sok. To connect two different

areas, namely Sungai Mas as the administrative area of the Ancient Kedah with Pengkalan Bujang, Sungai Terus was used by the Kedahan at that time as an alternative route or using the main route through the estuary of Merbok River and Muda River.

Muda River, Merbok River and their respective tributaries played important roles in the daily lives of Ancient Kedahan, either for economic, religious purposes or in their daily activities, therefore contributed to why were some of the *candi* were built in a location near a river. Nonetheless it is also important to emphasised even the construction of a temple near a river were mentioned in Sanskrit texts, the builders of *candi* in Kedah have not neglected their own local beliefs and surrounding environment for construction of their *candi*. Furthermore, river which is one of the main route used at that time has made it easier for the Ancient Kedahan to go the temple that was built near it.

Besides the factors that have been discussed above, river also offered raw materials for the Ancient Kedahan to build their *candi*, which is clay. Clays were accumulated mainly for producing bricks, which in this case, were used in constructing *candi*. *Candi* of Kampung Baru and Pengkalan Bujang group, particularly, were built by bricks without mortar or other types of adhesives. Moreover, past research have clearly determined that the clays that were used to produced the *candi* bricks are gathered from the local river basin (Ramli et al., 2012, 2014, 2018; Ramli & Rahman, 2013).

#### **4.2. Mountain**

The belief of sacred mountain in Southeast Asia have been introduced by the locals before Indian influences came to this region, as Chihara (1996) argue that this belief were shared by other communities around the globe including here. After Indian influences became dominant in the Malay World and also in Kedah, the belief that Mount Meru is a sacred mountain and an important entity in the cosmos has grown from just being believed by the people living in India to other parts of Asia such as the Malay World and even as far as China. The importance of this mountain in Hinduism and Buddhism is because it is the dwelling place for the gods and Meru is the centre of the universe. Some of the ancient texts of Hindu and Buddhist describes the characteristic of this mountain in some great length, as also how other mountain are located around the Meru. The belief of Mount Meru can be traced back to the early days of the emergence of Hinduism and Buddhism, when there was a continuum of discussions about Mount Meru in ancient India especially in the *purana* (Mabbett, 1983).

In Kedah, the symbolism of Meru can be identified by the influence of Mount Jerai towards the Ancient

Kedahan (Figure 8). As the Kedahan were also influenced by the elements from the India subcontinent, Meru also became one of the important things in their belief. Construction of *candi* or places of worship on the hills and mountains also occurred in Ancient Kedah based on the remains of the temple structure. The surroundings of some of the *candi* are also decorated with a view of the backdrop of Mount Jerai. Mount Jerai is an isolated mountain located 11 kilometers from Gurun town and 43 kilometers from South Alor Setar. Buddhist *candi* in Kedah such as at the Kampung Baru Archaeological Site and in Pengkalan Bujang are oriented to face the Mount Jerai. Besides the mystic influences that Jerai have as a symbol to Meru, it is also serves as an important marker to the *candi* builders in determining the orientation of their *candi*. Even Mount Jerai was also used as an indicator by the sailors who want to stop in Ancient Kedah port.

The importance of Mount Jerai to the Ancient Kedahan can be seen from the adaptation of their beliefs of Meru as a sacred mountain. Therefore, Jerai has been made the main mountain in Ancient Kedah, especially in determining the direction and in the construction of *candi* in Kedah. Besides that, the understanding and beliefs of the people of Ancient Kedah towards Meru also made them build temples in high areas such as in the hills as discussed. In addition, the position of Mount Jerai which is located close to the *candi* location in has enabled some of it to be built using rocks and raw materials obtained from Mount Jerai.



**Figure 6** Mount Jerai and paddy field

## 5. CONCLUSION

The location that has been chose to construct *candi* were based undoubtedly on the influence of the environment and what have been mentioned in the Sankrit texts. The Ancient Kedahan relied on the river, mainly the Muda and Merbok River, as the main route to move from one place to another. They also made Mount Jerai as a guide or indicator in their voyage, especially to enter the port of Ancient Kedah, besides also making this mountain as an indicator to the North purposefully in the construction of their *candi*. Candi

were built in areas that were the focus of the public and close to resources such as food sources and clay.

## AUTHORS' CONTRIBUTIONS

All of the authors (or co-authors) mentioned above are actively participates and contributes in this research and writing of this paper.

## REFERENCES

- [1] Chihara, D. (1996). *Hindu-Buddhist Architecture in Southeast Asia*. Brill.
- [2] Evans, I. H. N. (1926). Results of an expedition to Kedah. *Journal of the Federated Malay States Museums*, 12, 74–82.
- [3] Evans, I. H. N. (1927). *Papers on the Ethnology and Archaeology of the Malay Peninsula*. Cambridge University Press.
- [4] Irby, F. W. (1905). A short account of some ancient remain found on Gunung Jerai, Kedah. *Journal of the Federated Malay States Museums*, 1, 79–81.
- [5] Ladlay, J. W. (1849). Note on the foregoing. In Low, James. On an Inscription from Keddah. *Journal of Asiatic Society of Bengal*, XVIII(1), 247 – 249.
- [6] Low, J. (1848). An account of several inscriptions found in Province Wellesley on the Peninsula of Malacca. *Journal of Asiatic Society of Bengal*, XVII(2), 62 – 66.
- [7] Low, J. (1849). On an Inscription from Keddah. *Journal of Asiatic Society of Bengal*, XVIII(1), 247.
- [8] Low, J. (1884). Extract of a letter from Col. James Low. *Journal of Asiatic Society of Bengal*, XVII(1), 232–233.
- [9] Mabbett, I. W. (1983). The symbolism of Mount Meru. *History of Religion*, 23(1), 64–83.
- [10] Rahman, N. H. S. N. A., & Yatim, O. M. (1992). *Warisan Lembah Bujang*. Ikatan Ahli Arkeologi Malaysia.
- [11] Ramli, Z., Abdul Rahman, N. H. S. N., Jahi, J. M., Razman, M. R., Syed Zakaria, S. Z., & Dadian, H. S. (2014). X-ray diffraction and X-ray fluorescence of clay and soil samples in sub district of Bujang and Merbok, Kedah, Malaysia. *Journal of Food, Agriculture and Environment*, 12(2), 1061–1065.
- [12] RAMLI, Z., KHAW, N. R., & MOHD NASIR, M. N. (2017). Kedah Tua Dari Kurun Ke-2 Hingga Ke-14 Masihi: Kronologi Sejarah Dan Peralihan Budaya. In Z. Ramli, J. Kasdan, M. R. Razman, K. Arifin, D. Efizon, & S. Harto (Eds.), *Prosiding*

*Seminar Antarabangsa ke-10 Ekologi, Habitat Manusia dan Perubahan Persekitaran di Alam Melayu* (pp. 391–416).

- [13] Ramli, Z., Nasir, M. N. M., Samian, A. L., Harun, N. Z., Hadi, M. S. B. A., Bakar, N. A., & Supian, N. S. M. (2018). XRD and XRF Analysis of the ancient bricks from Candi Kampung Baru, Kedah. *Planning Malaysia*, 16(1), 314–323. <https://doi.org/10.21837/pmjournal.v16.i5.434>
- [14] Ramli, Z., & Rahman, N. H. S. N. (2013). Composition analysis of ancient Bricks, Candi Bukit Kechil, Bujang Valley, Kedah. *Research Journal of Applied Sciences, Engineering and Technology*, 6(5), 924–930. <https://doi.org/10.19026/rjaset.6.4143>
- [15] Ramli, Z., Rahman, N. H. S. N. A., Jusoh, A., & Hussein, M. Z. (2012). Compositional analysis on ancient bricks from candi sungai mas (Site 32/34), Bujang Valley, Kedah. *American Journal of Applied Sciences*, 9(2), 196–201. <https://doi.org/10.3844/ajassp.2012.196.201>
- [16] Ramli, Z., Rahman, N. H. S. N. A., Samian, A. L., Md. Noor, S., & Yarmo, M. A. (2011). Scientific analysis of ancient bricks at Bukit Pendiak temple (Site 17) and Pengkalan Bujang temple (Site 23): A comparative study. In *Research Journal of Applied Sciences* (Vol. 6, Issue 7, pp. 473–478). <https://doi.org/10.3923/rjasci.2011.473.478>
- [17] Sabtu, M. S. (2002). *Tamadun Awal Lembah Bujang*. Dewan Bahasa dan Pustaka.
- [18] Wales, H. G. Q. (1940). Archaeological research on ancient Indian colonization in Malaya. *Journal of the Malaysian Branch of the Royal Asiatic Society*, 18(1), 1–85.