

## Traditional Ecological Knowledge (TEK) in Selected Heritage Mosques of Malacca, Malaysia

*Rosta Harun and Fadhilah Othman*

Department of Environmental Management, Faculty of Environmental Studies, Universiti Putra Malaysia

**Abstract:** The art of mosque architecture gives a way of understanding about the relationship between Islam and local people's culture. This study aims to discover environmental philosophy of heritage mosques in Malacca with the main objective of the study is to uncover traditional ecological knowledge (TEK) elements in heritage mosques of Malacca to see how previous people communicate with environment through religious building. Qualitative approaches were used as methodology of this study. Five mosques were selected after literature analysis on available heritage mosques' history and information. Selection was made based on the longest periods they had been established and moderate distance between each other to limit external influences onto TEK. The findings indicated that uncovered TEK from selected heritage mosques in Malacca consists of the ideas on hierarchy of nature, mosque symbolization of earth, *som* and *sulur bayung*, spiritual value of heritage mosque and carved coral reef summit. Most inspirations on mosque structure and design were taken from previous people observation upon the environment which they had translated creatively in several structures of the mosques. Nevertheless, the TEK of heritage mosques in Malacca still obey Islamic core value (*aqidah*).

**Key words:** Traditional ecological knowledge (TEK) • Heritage mosques • Malacca • Religious building • Environment

### INTRODUCTION

**Background of Study:** The building of a mosque can be interpreted as language that explains the concept of Muslim's prayer house with certain contents or messages from Islamic religious perspectives. Mosques are designed from the consequence of Muslim's adaptation upon its surrounding and therefore can be viewed from two main perspectives which are the function and form [1]. Mosque's function is clear and same regardless which land the mosque is located, that is to convey the oneness of Allah through obligation like *Solat* (prayer). The form of mosque which is also the main topic of discussion for this paper is different however. There is no particular size or shapes that must be possessed by a mosque though the main references of mosque study are commonly shown by Prophet Mosque in Madinah and Masjid-ul Haram in Makkah. Since Islam embraced people throughout the world, mosque development has responded to climate, technological and socio-political concerns [2]. Representing Islamic architecture, mosque has allowed creativity for Muslim to design their mosque suitable for their surroundings [1]:

Islamic architecture promotes unity in diversity, that is, the unity of message and purpose and the diversity of styles, methods and solutions.

The diversity of styles, methods and solutions from mosque's design as responded to people's adaption and interpretation from their surrounding is best explained from the perspective of Traditional Ecological Knowledge (TEK). Interestingly in this case, TEK should not be explained solely as ecological knowledge handed through generations, but rather related with Islamic teaching that commands the believers to protect the environment to the possible extent, without neglecting human's need to utilize natural sources from it. In the other words TEK in this study was uncovered aware of the appreciation of nature and with religious guideline of Islamic teaching.

There are numbers of studies done on mosques that concerned only on physical or architectural design and less revealed the philosophical side of the mosques. In one of the studies, mosques in Malaysia were classified into several styles and possible influences [2]. Seven styles of mosques discovered in Malaysia are Traditional Vernacular, the Sino-Eclectic, the Colonial, the North

Indian, the Modern Vernacular, the Modernistic Expressionism and the Post-Modern Revivalism.

Perhaps the meanings or the architectural philosophies of traditional mosques in Malaysia have been acknowledged indirectly. A study on Kampung Laut mosque in Kelantan for example [3] has proposed the influence of Islamic cosmology in at the structure of the roofs. Even so, there is lack of elaboration on how the information was retrieved and to what extent the philosophies of the mosque obey Islamic teaching. It should be noted that the form and function of a mosque must be comprehend together to present mosque as a whole [1]:

The form, divorced from function, is inconsequential. This, however, by no means implies that the form plays no role in Islamic architecture. It does play a prominent role, but its relevance is a supportive one supplementing and enhancing function. The form is important but in terms of value and substance it always comes second to function with its wide scope. There must exist the closest relationship between the ideals that underpin the form of buildings and the ideals that underpin their function, with which the users of buildings must be at ease. A rift or conflict between the two is bound to lead to a conflict of some far-reaching psychological proportions in the users of the building. Therefore, the roles of form are equivalent to the roles of function.

Looking at the gap, this study hence conducted to observe the harmony interaction with nature created by traditional mosques through the uncovering of the TEK in line with Islamic teaching in selected heritage mosques of Malacca. Since TEK is a series of knowledge of people's adaptation on their surrounding, heritage mosques will be of relevance compare to modern mosques. Harmony here refers to the 'communication' of the mosques with the environment in meaningful manner besides function as a medium to tell people to 'behave' with the environment. The primary objectives of this study are to uncover TEK in selected heritage mosques in Malacca and to investigate the acceptability of the TEKs according to the teaching of Islam.

## Literature Review

**The Concept of Mosque:** Mosque or *masjid* is derived from the original word of *sujud*, *sajada*, *sujūdan* that

literally brings the meaning of prostration [4-6]. In a deeper meaning, mosque is a specific place to worship Allah through *solat* or prayer obligation. Appropriately, it is also often used to describe Islamic architecture since it has the most consistent perception on the matter. As it goes with the connection of building and religion, in this case mosque and Islam, the facilities should be a physical locus of the actualization of Islamic message [1], which solely to glorify Allah. In addition to that, Islamic architecture must also represent the religion and the identity of Islamic culture and civilization.

Even so, the portraying of mosque as Islamic architecture should come under consciousness of Islamic understanding of God (Allah), man, nature, life, death and Hereafter [1]. That idea leads to the division of Islamic teaching which are *aqidah* (belief on Allah and Hereafter); *shariah* (regulation in Islam); and *akhlak* or adaptation (e.g. how man must behave with nature).

**Development of Mosques in Malacca:** Study of mosque development in Malaysia cannot be separated from Malacca history. Malacca is among the first state of Malay Land that has accepted Islamic teaching through centuries of trade and later emerged as earliest Islamic centre along with Acheh in Malays archipelago. Malacca and Ached has adopted the mosque as an essential component of their urban core prior since thirteenth century [7]. The first Malaccan Sultanate which is Sultan Iskandar Shah initiated the first mosque of Malacca in 1402 and ever since of that mosque development in Malay land bloomed as Islam was spread all over the land. India, China and Arabia are the sources of Islam in Southeast Asia [8] and therefore they have brought significant influences in the development of mosque architecture in the regions like Demak mosque in Java.

The thinking concept that stands behind traditional mosques in Malaysia specifically Malacca has derived from Pre-Islam era [9] with additional motivation to present culture sociology and cosmology of local people. The buildings of traditional mosque also hold special elements which are very unique since it cannot be found in any region but Malay Archipelago. Influence of foreign culture in mosque architecture can be observed in an old traditional Kampung Hulu mosque, Malacca. Moreover, traditional mosques in Malacca and other states in West Malaysia are also the symbol of

aesthetic expression which encompasses some philosophies from the signs of oneness of God (Allah). Connection that exists between mosque and environment can be seen through the concept of the mosque itself which is a place to worshiping Allah through prayer obligation [4, 5].

The term of heritage mosques were obtained when Malacca was honored as one the world's heritage sites in 2008 as they demonstrate a succession of cultural and historical influences arising from their former function as trading ports linking East and West [10]:

Melaka and George Town, historic cities of the Straits of Malacca (Malaysia) have developed over 500 years of trading and cultural exchanges between East and West in the Straits of Malacca. The influences of Asia and Europe have endowed the towns with a specific multicultural heritage that is both tangible and intangible. With its government buildings, churches, squares and fortifications, Melaka demonstrates the early stages of this history originating in the 15th-century Malay sultanate and the Portuguese and Dutch periods beginning in the early 16th century. Featuring residential and commercial buildings, George Town represents the British era from the end of the 18th century. The two towns constitute a unique architectural and cultural townscape without parallel anywhere in East and Southeast Asia.

Since then, old mosques and other traditional buildings or monuments were gazette for conservation purpose so that the future generation will be able to understand their roots and culture.

**Traditional Ecological Knowledge (TEK):** TEK was once known as Indigenous Knowledge (IK). Broadly speaking, it is a knowledge used by local people to make a living in a particular environment [11]. In sustainable development, the term is used to design the concept of indigenous technical knowledge, traditional environmental knowledge, rural knowledge, local knowledge and former's or pastoralist's knowledge. TEK can be understood as a cumulative body of knowledge and beliefs which handed down through generations by cultural transmission [12] about the relationship of living beings (including humans) with one another and with their environment [13]. In addition, it is also an attribute of

societies with historical continuity in practice of using resources. The societies usually are non-industrial or less technologically advanced with many of them are indigenous or tribal. TEK is differentiated from scientific ecological knowledge as a qualitative explanation, holistic and spiritually sound. In practical significant of TEK, it can be used as source of knowledge for protected areas and for conservation education [13] hence it should not be overlooked as old-fashioned, backwards, static or unchanged because TEK or IK is a creative and experimental adaptation of local people incorporating outside influences and inside innovations to meet new conditions [14].

Heritage mosques are related to TEK in a way that they are product of collective ideas and interpretations (present in the form of design) of people during the time regarding Islam and nature. As long as the forms of the mosques do not tolerate the *aqidah* in Islam, they can always be accepted [1]:

Certainly, this is what renders Islamic architecture so relevant and dynamic and so consistent and adaptable.

TEK is also changing with the evolution of the environment and people's surrounding. There is always expansion of TEK by people when they need to adapt to the changes in order to sustain still their needs.

**Methodology:** Qualitative method was used for methodology of this study. A qualitative study is usually characterized by its inductive and descriptive way in elaborating a finding [15]. The focus of qualitative study stresses on understanding an environmental phenomenon from many aspects of respondent's perspective of view. A similar study on mosque comparison have used descriptive and analytical method that involves deep literature review and field observations [8, 9]. Extensive information on history of the place and mosques has been carried out first prior mosque and field of study selection [8]. The study of uncovering of TEK in selected heritage mosques in Malacca has two major stages namely literature review and field study (Figure 1).

Out of 65 heritage mosque all over Malacca, five mosques were selected (Table 1) after deep literature analysis on mosques' history and information. The mosques were chosen based on the longest periods they had been established and moderate distance between each other to control external influences onto TEK.

Table 1: List of selected heritage mosques with establishment year

Mosques	Establishment year
Masjid Kampung Hulu ( <i>Kampung Hulu Mosque</i> )	1728
Masjid Kampung Keling ( <i>Kampung Keling Mosque</i> )	1748
Masjid Tangkera ( <i>Tangkera Mosque</i> )	1728
Masjid An-Nur, Peringgit ( <i>An-Nur Mosque, Peringgit</i> )	1756
Masjid Jamek Laksamana Hang Tuah, Kampung Duyung ( <i>Jamek Laksamana Hang Tuah Mosque, Kampung Duyung</i> )	1850

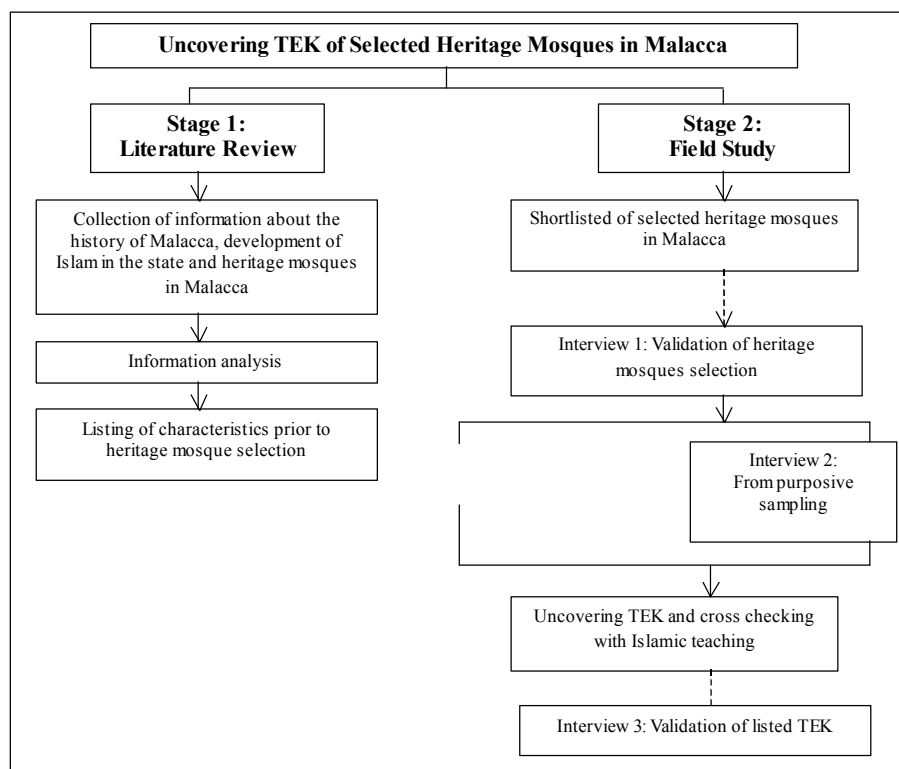


Fig. 1: Process of uncovering TEK in selected heritage mosques in Malacca

Besides literature analysis, mosque inspections and interviews were also carried out. Interview is an interaction between two or more people [14] and the types may vary in style and format. Commonly, there are four types of interview used in qualitative study which are (i) informal interviews; (ii) unstructured interviews; (iii) semi-structured interviews and (iv) structured interviews. Less structured interview questions allow mutual understanding between interviewer and interviewee [14, 16].

As for this study, in-depth interviews were applied where issues were prompted upon responses of respondents to the prepared semi constructed questions.

Semi constructed questions used in the study have covered identified research questions including the details on questions of 'who', 'what', 'where', 'when', 'how' and 'why' upon TEK beliefs, tools and practices. This approach of interview gives freedom and space for respondents to convey the information they have more freely.

Respondents were selected from purposive sampling which they were first given specific criteria for instance those people whom exposed to heritage mosques either directly/indirectly and formally/informally. The respondents were found among people who spent their life in or near heritage mosque, imams, muezzins, heritage mosques care takers, museum curators and historians.

The interviews were transcribed, coded and grouped into categories e.g. general knowledge on history of heritage mosque, understanding on TEK, identification of TEK and etc. Following that data interpretation was conducted by means of grounded theory approach. The approach is a generation of an abstract analytical schema of phenomenon and theories that explain some action, interaction and process [17].

For the purpose of finding reliability, this study has considered internal and external validation steps. Internal validation process occur during the whole study with approach constantly used was triangulation in order to improve the validity and reliability of findings by controlling the bias and establish a valid propositions [18]. Other researchers or experts involve in the study included museum curators, historian, Muslim scholars and expert in qualitative study. In action to control bias of TEK understanding during in depth interviews, respondents were briefed on the concept of TEK besides they were given enough space to redefine or reconceptualized according to their understanding. All of the respondents begun with telling the history of Malacca before specifically explained the selected heritage mosques.

## DISCUSSIONS

### Uncovered TEK from Selected Heritage Mosques:

Most of the respondents are not familiar with the term TEK. When explained on concept of TEK, they tend to rephrase it with Arabic word '*maarifat*' which means philosophical part of the mosques (route to learn more about Allah) and they also denied the possibility that TEK of heritage mosques is associated with any mystical belief in Malay culture.

"The meaning of the mosques (design) is called *ma'rifat* or *hakikat*. Since it is (a) mosque, it has no influence from mystics though Malay is known with *pantang larang* (abstention) and *petua* (folk advices) and legends." – Curator 1

The detail of *maarifat* of heritage mosques is not widely known except to small group of people. Even so, the respondents did have fragmented knowledge about TEK in Malacca heritage mosques. In this case, respondents have indirectly mentioned that TEK must somehow relate to nature (appreciation or acknowledgement) and religion (Islam).



Photo 1: Eaves of Tengker mosque

**Hierarchy of Nature:** The structure of heritage mosque's roofs has the shape of pyramid. The roofs of selected heritage mosques have three layers of eaves that explain the relationship between God (Allah), man and environment. An example of heritage mosques' roof is shown through Tengker mosques eaves (Photo 1). Respondents believe that the top-narrowed roof is a symbolic of human's faith in Allah. Following that, the second layer represents social relationship in human society. Finally the bottom layer conceptualized environment as a medium that connect human and creator. In an unpublished old document entitle *Masjid Kampung Hulu* given by the caretaker of Kampung Hulu mosque lays a brief statement regarding the unique shape of traditional mosques' roofs design:

Spaces between the roofs allow winds and light into the mosque. People believe that the top layer of roof means human's faith on God (Allah); the second layer means relationship among humans while the third layer means (symbolizes) nature that serve to be a medium that connect human and (their) Creator.

Environment is represented by the largest size of eave at the bottom as a symbolic of important basement that supports every single entity on earth.

"..environment is (an) honor of gift from God (Allah) to (His) caliphs. Human is only a small part (that) lives in the middle of the universe to worship Him through ordered obligation, (and) limitations..." – Mosque care taker 1.

Besides, environment also provides sources to human so that they can fulfill their needs in completing the responsibilities to protect the environment whilst

developing the earth. The disorder of this hierarchy will cause nuisance and imbalance in human's life. The eaves furthermore explain that harmonic balance in nature can be achieved only if human communicate with the environment (utilize natural resources) wisely while sustaining their social need. The creator has provided us with a value system as guidelines for human on how they can communicate with environment wisely without causing damage to it.

**The Symbolic of Earth:** Heritage mosques in Malacca are known to be rectangular in shape. It symbolizes four corners of the earth (North, South, East and West) and what exists within the corners. This information is found documented in an introduction to mosques in Malacca [19]:

It is well known that almost all the mosques in Malacca are rectangular in shape. This symbolizes the four corners of the earth and what are in between.

In the other meaning, every single entity on the earth is protected by a closed value system (represent by the mosque) which roots from the creator of the earth. In addition to that the whole earth can also be regarded as a macrocosmic mosque [5]:

A mosque is specifically demarcated space for performing the prescribed congregational prayers. Apart from this place a Muslim is free to observe his prayer at any space that is clean. The entire surface of the earth can thus be regarded as a place for prostration for Muslims.

Muslim shall think of the earth surface as a mosque where he has to do any form of good deeds with intention for the sake of Allah and avoid anything that could ruin it.

**Som and Sulur-Bayung:** Nature appreciation was portrayed so fine in the form of heritage mosques. People of Malacca during the development of heritage mosques had excellently adapted to their environmental surrounding by giving nature credit on the design of mosque. A good example is shown through the shape of roof's edges. The space between roofs is given the name *som* while *sulur-bayung* (Photo 2) is the design on the edge of the eave. In a documentation of mosques in Malacca [19], *sulur bayung* is described to resemble action in prayer:



Photo 2: *Som* and *sulur bayung* at Tengkeras mosque

The *sulur-bayung* is a shape like hand and fingers of a person performing *tahiyat* in prayer. The design was inspired by the shape of *bayung* plants that can be easily found at the river near Malacca.

The ideas of heritage mosques design did not come entirely from the environment, but also from the actions in *solat* (prayer). *Sulur bayung* was pronounced to be the style of Malacca mosque and such design can be prominently seen at Tengkeras mosque [20]:

Tengkeras mosque's *sulur bayung* ornaments are in the form of timber affixes attached to the end of the Chinese ridges, while an octagonal pagoda-like concrete minaret was built in 1910.

The style can also be observed in the wood carving at windows, pillars and pulpit of heritage mosques. *Sulur bayung* is widely used in wood carving that it symbolized artistic design of Malay culture.

**Spiritual Value of Heritage Mosque:** Spiritual value is a discussion of intrinsic, independent and subjective matter that closely relates to the feeling so contained and solace. The definition has been elaborated in study of deep psychology in relation to spiritual values of nature [21]:

'Spiritual' refers to the experience of being related to or in touch with an 'other' that transcends one's individual sense of self and gives meaning to one's life at a deeper than 'intellectual level.

The spiritual values of nature have been celebrated in arts, literature, music and philosophy since the earliest century. Old mosques in Malacca do give a feeling of tranquility to people who want to gain closer relationship

with Allah. Kampung Keling mosque has a space between the roofs that allow Muslim to isolate himself as effort to get closer to Allah.

“..usually during fasting month (*Ramadhan*), Muslims came to be alone in that area somewhere at the space of middle eave. They spent time doing prayers or reading Quran. They gain strength in their spirit. (They) even get to meet the soul of scholars who was buried there..” – Mosque care taker 4.

Similar with the environment, the beauty of nature creation is completed with intrinsic, esthetical and spiritual values. Hence, the mosque is like the earth, where one can finds peace and tranquility [5].

**Carved Coral Reef Summit:** The dome or the summit of most heritage mosques was made of carved coral reef. All heritage mosques in this study have a summit made from carved coral reef apart of Laksamana Hang Tuah *jamek* mosque.

“..besides for the purpose of esthetic, coral reef was used as materials because it can last for a very long time and may not easily erode from weathering process..” – Mosque committee member 2.

The design of the summit is inspired by flora particularly *Bayung* plant and may also represent *sirih junjung* in Malay culture:

“What is usually used to convey an important message in our (Malay) culture? –*Sirih junjung*. It is the most polite way of asking for permission or anything. The way *sirih* leaves are arranged (facing up) means the faith of Malay on oneness of Allah.” – Museum curator 1.

*Sirih* is a plant commonly found in Malaysia but in this context, *sirih* refers to the leaves of the plant and it has significant influence in Malay culture [22]:

*Sirih* is a dessert eats by folks. It is also served to guests as a symbol of respect during opening ceremony or mark of friendship. The use of *sirih* for such purpose has become less popular among youth. *Sirih* is also used for leisure and resting time. For Kelantanese Malay, *sirih* is used (presented) during engagement and wedding as *sirih junjung*. (Especially) in engagement ceremony, *sirih* is believed to strengthen social relationship between couples and their families.



Photo 3: *Sirih junjung* will lead the present presentation during engagement or wedding ceremony in Malay culture

Whenever *sirih junjung* is presented, it is instantly understood that the person has a very important wish and asking permission or granted for it politely. The resemblance of *sirih junjung* as shown in Photo 3 [23] and the summit of heritage mosques intents to tell Muslim just how vital is the *aqidah* of Islam yet creatively used as privilege of nature appreciation.

**Limitation and Suggestions for Future Study:** Interviews in this study were conducted individually according to semi structured mode. Though individual interview is flexible and offers in depth information, yet it is difficult to gain collective understanding on TEK among respondents. When explained that TEK in this study is ecological knowledge related to the mosque which passed through generation, some of the respondents summarized the concept as if TEK is a mystical belief in Malay culture about the power of nature. However, after detail elaboration and several examples, they agreed that the heritage mosques were built by people's interpretation from nature at their surroundings.

Therefore, to tackle the weakness and improve the process of validation, focus group discussion (FGD) is proposed as a new measuring instrument for the study to complete in-depth individual interviews. The application of FGD alone will do less advantage compare to disadvantages of individual interviews for the study [24]:

Focus groups are neither as strong as participant observation in their ability to observe phenomena in context, nor as strong as in-depth individual interviews in providing a rich understanding of participants' knowledge. However, they are better at combining those two goals than either technique alone.

Additional technique through FGD will be useful in a way that the process of data collection is conducted by semi-structured mode yet systematically lead by an instructor. Several groups of participants will be selected through purposive sampling of those who has similar characteristics relevant to the study and they will be given the base concept of TEK to be discussed to reflect social realities of their culture.

Combination of both individual interviews will enhance data collection process, acquirement [25] and richness [26]; filter and sharpen the understanding upon subject matter and provide an intact validation of the findings. Contribution of mixed approach is also described in a critical analysis of qualitative method [26]:

The integration of focus group and individual interview data made three main contributions: a productive iterative process whereby an initial model of the phenomenon guided the exploration of individual accounts and successive individual data further enriched the conceptualization of the phenomenon; identification of the individual and contextual circumstances surrounding the phenomenon, which added to the interpretation of the structure of the phenomenon; and convergence of the central characteristics of the phenomenon across focus groups and individual interviews, which enhanced trustworthiness of findings.

This suggestion is applicable not just in environmental philosophies of heritage mosques, but also for studies related to other religious buildings' connection to the appreciation of the environment. Essential in any study associated with religion is the dependency on 'holy sources' of the religion like in this case Quran and Hadith as the major references to authenticate the TEK. The sources shall lead the discussion and will promise the righteous and correctness of the findings. Absence of ones will cause misinterpretation by the researcher and it will lead to religious sensitivity and confusion.

## CONCLUSION

TEK in heritage mosque of Malacca shows that mosque was once an important avenue to convey the idea of harmonic interaction between man and environment. Most inspirations on mosque structure and design were taken from previous people observation upon the environment. Nevertheless, the TEK of heritage mosque in Malacca cannot be separated from Islamic teaching about the environment. Old scholars from the time these mosques were established have strongly hold onto Quran as sources to guide establishment of mosque building. Muslims were told indirectly from the architecture of the mosque to behave 'wisely' with the environment

according to *shariah* teaching. For example the command to use clean-available sources for prayer and prohibition of wasting natural resources e.g. water. So Muslim at that time created an ablution place that collects water from the rain. That way, they reserved groundwater to be used for other purpose. These TEK was descended through the generation. It is crucial to properly record discovered TEK from heritage building so that in future it will not be lost as it is passed verbally through generation besides can be reapplied in modern buildings.

## REFERENCES

1. Omer, S., 2010. Some Lessons from Prophet Muhammad (SAW) in Architecture: The Prophet's Mosque in Madinah. *Intellectual Discourse*, 18(1): 115-140.
2. Rasdi, M. and M.M.R. Tajuddin, 2007. Mosque Architecture in Malaysia: Classification of Styles and Possible Influence. *J. Alam Bina.*, 9(3): 1-37.
3. Julaihi, W., Z. Hanafi and A.Y. Zakiiulfuad, 2002. In the Proceeding Simposim Melayu Malaysia: Masjid Tradisional Melayu: Suatu Manifestasi Pengabdian Melayu, pp: 88-126.
4. Maliah, S., 2007. The International Control Procedures of Mosques in Malaysia. *Revista Universo Constabil*, 3(2): 101-115.
5. Iskandar, S.A.S.A., 2005. Architectural Conservation in Islam: Case Study of the Prophet's Mosque. *Universiti Teknologi Malaysia, Johor*.
6. Zambri, M.A., 2001. Wadi al-Hussein: Masjid Kayu Terindah. *Universiti Kebangsaan Malaysia*.
7. Wiryomartono, B., 2009. Postcard From The Field: A Historical View of Mosque Architecture in Indonesia. *The Asia Pasific J. Anthropol.*, 10(1): 35-45.
8. Ahmed, E.I.W., 2007. The Architecture of the Early Mosques and Shrines of Java: Influences of Arab Merchants in the 15th and 16th Centuries. *Dessertation. Bamberg University*.
9. Azizul, A.A.A., 2001. Comparative Study Design Conception of Masjid Kampung Hulu, Melaka with Majid Agung Demak, Jawa. *Central Library Institute Technology Bandung. Indonesia*.
10. UNESCO. United Nations Educational, Scientific and Cultural Organization. *World Heritage. Melaka and George Town, Historic Cities of the Straits Of Malacca*. Retrieved from <http://Whc.Unesco.Org> On 25 October 2010.
11. Warren, D.M., 1991. Using Indigenous Knowledge for Agricultural Development. *World Bank Discussion Paper 127, Washington, D.C. US*.



12. Johnson, M., 1992. Lore: Capturing Traditional Environmental Knowledge. International Development Research Center (IDRC), Ottawa, Canada.
13. Inglis, J.T., (eds). 2002. Traditional Ecological Knowledge: Concepts and Cases. International Development Research Center (IDRC). Ottawa, Canada.
14. Langill, S., 1999. Indigenous Knowledge: A Resource Kit for Sustainable Development Researchers in Dryland Africa. IDRC, Ottawa, Canada.
15. Merriam, S.B., 1998. Qualitative Research and Case Study Applications in Education. Jossey-Bass. San Fransisco.
16. Othman, L., 2009. Penyelidikan Kualitatif: Pengenalan kepada Teori dan Metod. Universiti Perguruan Sultan Idris, Tanjung Malim, Perak.
17. McCaslin, M.L. and K.L. Scott, 2003. The Five Question-Method for Framing a Qualitative Research Study. The Qualitative Report 8(3): 447-461. Idaho, USA.
18. Golafshani, N., 2003. Understanding Reliability and Validity in Qualitative Research. The Qualitative Report, 8(4): 597-607.
19. IKTIKAF. 2010. Malacca Government. Malaysia.
20. Imran, T., 2008. Adaptation and Accentuation: Type Transformation in Vernacular Nusantara Mosque Design and Their Contemporary Signification in Melaka, Minangkabau and Singapore. In the Proceeding of the 2008 Pace or Speed? 4th International Seminar on Vernacular Settlement, pp: 143-162.
21. Herbert, W.S., 1991. The Spiritual Aspect of Nature: A Perspective from Depth Psychology. In the Proceedings of Northeastern Recreation Research Symposium, pp: 25-30.
22. Aishah@Eshah, M., M. Sulong and H. Haziyah, 2010. Food Gifts in Kelantanese Malay Weddings: Custom and Interpretation. Jurnal e-Bangi 5(1): 103-115.
23. Berhah, C.H. 2005. Gubahan Hantaran. Utusan Publication & Distributor Sdn Bhd. Kuala Lumpur, Malaysia.
24. McLafferty, I., 2004. Focus group interviews as a data collecting strategy. J. Advanced Nursing, 48(2): 187-194.
25. O'Sullivan, M., J. Martin and E. Murray, 2000. Medical Education, 34: 648-655.
26. Lambert, S.D. and C.G. Loiselle, 2008. J. Advanced Nursing, 62(2): 228-237.