

The Art of Kelarai in Malay Architecture

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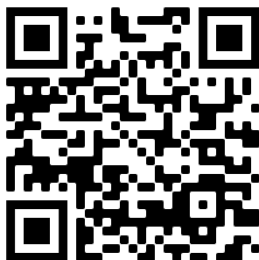
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Abstract – *Kelarai* is defined as checkered weave patterns, a craftwork that has been passed down from generation to generation in Malay culture and people in Southeast Asia. Since its beginning, the arrangement of simple patterns has now grown into many unique *kelarai* designs with different making techniques or weaving techniques applied for each *kelarai*. *Kelarai* is utilized in various products, from everyday items like mats and food covers to decorative elements seen in traditional architecture, like walls and windows. People today can still recognize the art of *kelarai* on daily basis products. However, only a few have seen or even know about the use of *kelarai* in traditional architecture. With only a few *kelarai* craftsmen and evidence of *kelarai* architecture left, the art of *kelarai* wall is also at risk of vanishing. Therefore, this study aims to document the varieties of *kelarai* in traditional architecture, the methods of *making kelarai* from *kelarai* craftsmen, and to identify the techniques used in *kelarai* walls of traditional architecture. An interview and participatory observation are conducted with *kelarai* craftsman to collect data. Site visits to case studies locations, visual documentation, and analysis through online search are undertaken to learn more about the remaining traces of *kelarai* architecture. The study is significant in the *diminishing kelarai architecture area* due to a lack of written documentation and awareness. The study will also contribute to the urgency of preserving the remaining *kelarai* architecture, which is gradually deteriorating and awaiting demolition.

Keywords: *kelarai, Malay architecture, traditional, wall.*

I. INTRODUCTION

Kelarai is defined as checkered weave patterns in Kamus Dewan (4th Edition). It is a craft work passed down from one generation to the next, among the people in the Southeast Asian Archipelagos, particularly the Malay people (Nasir & Wan Teh, 1997). It can be called a *kelarai* when multiple simple patterns are arranged to form a pattern (Nadiyah & Muhammad, 2017). *Kelarai* can be used in a wide range of products, from daily mats and food covers to decorative elements like walls and windows of traditional architecture (Ismail, 2013).

According to historians, the practice of weaving *kelarai* crafts was first practised in the prehistoric period (Marzuki & Mariam, 2021). The craft started as a skill to produce tools made from natural materials that were available then. During those days, people would use suitable tropical plants as the material to make *kelarai*, and many plant types could be used (Sulaiman & Husain, 2019). They will use plants suitable for the function of the product they wanted to produce.

The usage of *kelarai* in architecture can be observed in Rumah Kutai, one of the oldest traditional Malay homes still surviving in Malaysia, where it was initially constructed in the 1800s

(Arif, 2019; see also Nasir & Aziz, 1985). Since then, the arrangement of simple patterns has grown to many unique *kelarai* designs where different making techniques or weaving techniques are applied for each *kelarai*. The production of *kelarai* also requires determination and patience as *kelarai* takes a lot of time and energy to be completed perfectly (Baniyamin et al., 2019).

Today, the art of *kelarai* is commonly seen in cultural products sold as souvenirs and accessories. However, its application in traditional architecture is little studied. Only around 40 Rumah Kutai are still standing along Sungai Perak (Arif, 2019), and not all of them had *kelarai* elements (Sulaiman, 2016), thus increasing the risk of the *kelarai* wall disappearing. One of the main contributors to the lack of knowledge in this area is the fact that the traditional Malay house itself is quickly diminishing. With the change of lifestyle, the advent of modernity, and the migration of rural people to metropolitan areas, the Malay houses are being abandoned. Together with the loss of architecture is the loss of the understanding of its material technology, which the *kelarai*, in the past, has been adorning luxurious houses and palaces (Ismail et al., 2015). With only a few *kelarai* craftsmen left, the art of *kelarai* wall is also at risk to have vanished. In addition, the lack of documentation of *kelarai* has become a problem in preserving the art as a society today is unfamiliar with the many types of *kelarai* and making the art unappreciated (Ismail & Nawawi, 2011). Hence, to preserve the art of *kelarai* in architecture, the research aims to document the varieties of *kelarai* in traditional architecture, the methods of making *kelarai* from *kelarai* artisans, and to identify the techniques used in *kelarai* wall of traditional architecture.

II. METHODOLOGY

The methods of conducting this research are illustrated in Figure 1. The interview is conducted using a personal face-to-face interview method where the questions and topics are asked and discussed personally and directly with the *kelarai* craftsman. The purpose of this interview is to document the making process of *kelarai* and the varieties of *kelarai* motifs explicitly used for architecture. The participant observation is done to obtain qualitative data in which the author will observe the demonstration by the *kelarai* craftsman and participate in the demonstration. The author takes part in the *kelarai* weaving process to observe and understand the nature of the *kelarai*-making process. The selected craftsman is an expert in the *kelarai* for architecture field and runs a *kelarai* business.

A site visit to four selected case studies of traditional architecture is conducted to identify and document the functions, conditions, and details of *kelarai* in traditional architecture. These four case studies are selected for their accessibility and good condition based on the initial internet search. Next, information on several other traditional houses with *kelarai* that are obtained from various internet sites is documented. Visual documentation and analysis are carried out on these traditional Malay houses where the buildings, motifs, and design of *Kelarai* are recorded. The photos captured and obtained from the internet sites are used in the research and need to be analyzed to obtain the findings regarding the *Kelarai* wall.

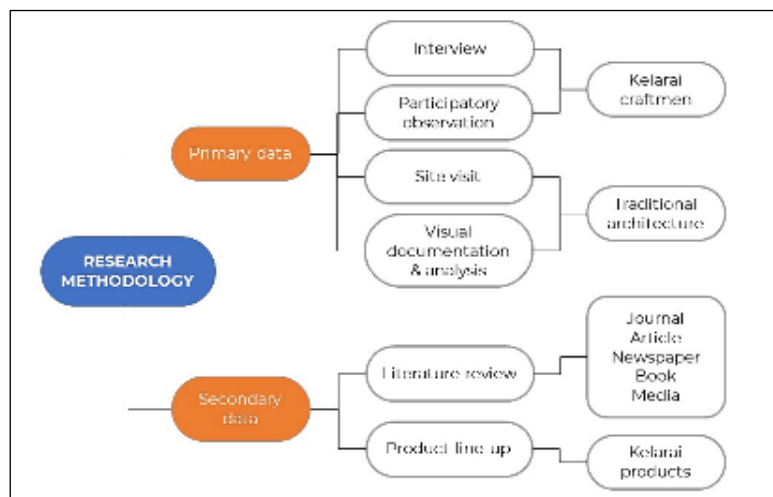


Fig. 1. Research Methodology
Source: Authors (2022)

A. Interview and Participatory Observation

The interview and participatory observation are conducted with Mr. Mohd Azmi bin Mohd Nopiah, an expert in applying *kelarai bertam* in traditional architecture. Mr. Mohd Azmi was born and raised in Kampung Anak Kurau, Batu Kurau, Perak, and is the third generation of his family to inherit the art of *kelarai bertam*. He was gifted the ‘*Pengusaha Bertam Terbaik*’ award in 2015 by the Perak state government for his craftsmanship and effort in preserving the art. He is still actively running his *kelarai bertam* business and is one of the well-known craftsmen in the field. The interview was conducted to obtain information about his background and the varieties of *kelarai* motifs he used for architecture. The author also participated in the demonstration to observe and understand the nature of *kelarai bertam* material, its making, and the weaving process.

Bertam is one of the plant materials that is widely used for *Kelarai* wall in traditional Malay architecture. A few *Kelarai* craftsmen specialize in *bertam* plant left in the market today. *Bertam* plant is not planted and is categorized as a weed plant that also spreads quickly. Therefore, when the owner of a nearby farm who wanted to get rid of the *bertam* plant that has grown, *Kelarai* craftsman can obtain the *bertam*, sometimes even for free. *Bertam* plant that has been cut down will grow back and are ready to be used after a year (see Fig. 2). *Kelarai* craftsman use the younger *bertam* plant for their *Kelarai* wall, while the older one can be used for other products such as outdoor blinds. The *bertam* residue from the finished *Kelarai* is the inner part of the rachis, and it can be used as fuel for fire (see Fig. 3). Shellac is used for protection and finishing purposes.



Fig. 2. *Bertam* Rachis Before They Are Processed
Source: Authors (2022)



Fig. 3. *Bertam* Bark Ready to Be Woven
Source: Authors (2022)

Kelarai walls are all handmade, with no machine involved. Therefore, the craftsman cannot produce *kelarai bertam* in large quantities as it is also a very time-consuming craft. There are four steps involved in the making of *kelarai bertam*. Firstly, the *bertam* rachis will be split into two parts. Next, the rachis is tapped lightly using a wooden stick. This process is to allow the rachis to become a bit softer. Next, the bark and the inner part of the *bertam* rachis are separated, where the bark will be used as *kelarai* wall. The *bertam* bark does not have to be dried before they are woven. Lastly, the bark of the *bertam* is threaded into a specific *kelarai* motif.

The young *bertam* plant is chosen as they are soft and more manageable to be woven. *Kelarai* wall will get harder and sturdier as time goes by. The challenges that craftsman faces during the

making process are mostly in obtaining the material where one's knowledge of the jungle is required (see Fig. 4). *Bertam* plant also has many prickles, and artisans must be conscientious while handling them. The durability of the *kelarai* wall also depends on the way the *kelarai* is taken care of. The use of shellac can extend the life span of the *kelarai* wall if they are repainted occasionally. The installation process also plays an essential role in the durability of the *kelarai*. If they are installed neatly and fit nicely on the wall, it will be hard for the *kelarai* to have deteriorated.


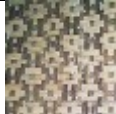


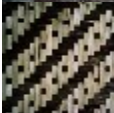

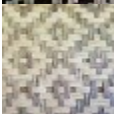

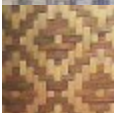

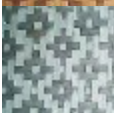
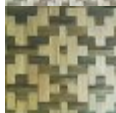


Fig. 4. Making Process of *Kelarai Bertam* Wall

Source: Photos are from Amri (2019), and the diagram is edited by the Authors

The original traditional motifs for *kelarai* wall that Mr. Mohd Azmi learned from his father are the *sesiku keluang* and *rebah* motifs. According to him, *sesiku keluang* is a classic motif that people have used since the 1930s. The other *kelarai* motifs he used in his business, he picked up the skills and ideas from *kelarai* motifs that are used in *kelarai mengkuang* product and used it in his *kelarai* wall. Mr. Mohd Azmi mainly decides the type of *kelarai* motif used based on the customers' requests. He also mentioned that he picks a motif to be placed at a specific location in the house by the mood that the motifs exude. The following table lists the common *kelarai* motifs that Mr. Mohd Azmi uses in his *kelarai* wall (see Table 1).

Table 1. Common Motifs Used in *Kelarai Bertam* Wall

No.	Pattern	Name of <i>Kelarai</i> Motifs	No.	Pattern	Name of <i>Kelarai</i> Motifs
1.		<i>Sesiku Keluang</i>	7.		<i>Songket Hitam</i>
2.		<i>Rebah</i>	8.		<i>Tampuk Pinang</i>
3.		<i>Rebah Bermata</i>	9.		<i>Mata Gergaji</i>
4.		<i>Tapak Lima Berkandang</i>	10.		<i>Tapak Gajah</i>
5.		<i>Tapak Tujuh Berkandang</i>	11.		<i>Pucuk Rebung</i>
6.		<i>Songket Putih</i>	12.		<i>Tampuk Manggis</i>

Source: Authors (2022)




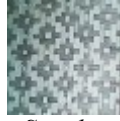
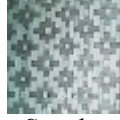
*B. Site Visit**1) Istana Kenangan*

The wall of Istana Kenangan is wholly made of *kelarai* tepas except for the wooden doors and windows (see Fig. 5). The motifs are divided into two parts for one floor. For each palace floor, the upper part above the wooden window is decorated with *tapak gajah* motif, while the lower part is made from *songket* motif. The motifs are then repeated and covered around the whole palace. The *kelarai* wall of Istana Kenangan is painted with the colours of Perak State flag (Muhammad et al., 2012). Overall, the condition of the *kelarai* wall is in good condition. They are well protected with finishing paint, and the paint colors are still bright. No missing parts were detected, and the wall is strong (see Table 2).

**Fig. 5.** Front View of Istana Kenangan

Source: Authors (2022)

Table 2. Istana Kenangan's *Kelarai* motif


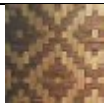
<i>Kelarai</i> Motif on the Wall	Location of Motif	<i>Kelarai</i> Motif
	The upper part of the first floor- above the window	 <i>Tapak gajah</i>
	The upper part of the second floor- above the window	 <i>Tapak gajah</i>
	The lower part of the first floor with no wall	 <i>Songket</i>
	The lower part of the second floor	 <i>Songket</i>

Source: Authors (2022)

2) Masjid Ihsaniah Iskandariah

The wall of Masjid Ihsaniah Iskandariah is covered with only *tapak tujuh berkandang* motif (see Fig. 6). The *tapak tujuh berkandang* motif is placed as the full-height wall. The *kelarai* panels are not placed as the doors and windows. The panels are placed from the lower part of the wall until it reaches the ceiling of the roof. The *kelarai* wall of Masjid Ihsaniah Iskandariah is painted with the colours of Perak State flag (Jasbindar, 2019). Based on the author's observations, the *kelarai* wall's condition is fair. *Kelarai* panels that are protected from direct sunlight are well intact, and the color of the paint can still be seen (see Table 3). However, for *kelarai* panels that have been exposed to the sunlight for a long time with no restoration measures taken, the paint color has faded, and the structure of the *kelarai* has started to get shabby.

**Fig. 6.** Front View of Masjid Ihsaniah Iskandariah
Source: Authors (2022)**Table 3.** Masjid Ihsaniah Iskandariah's *Kelarai* Motif

<i>Kelarai</i> Motif of Masjid Ihsaniah Iskandariah	Location of Motif	<i>Kelarai</i> Motif
	Full Height <i>Kelarai</i> Wall	 <i>Tapak Tujuh Berkandang</i>

Source: Kelarai motif of Masjid Ihsaniah Iskandariah is from Ahzahr et al. (2012)


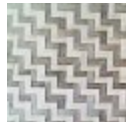
3) Rumah Kutai I (Kompleks Sejarah Pasir Salak)

The wall of Rumah Kutai I is made up of one kelarai motif, *sesiku keluang* motif (see Fig. 7). The *sesiku keluang* motif is placed as the entire height wall from the level of the window to the *tebar layar*. The *kelarai* panels are not placed as the doors and windows. The *kelarai* wall of Rumah Kutai I is in good condition as they are well protected with finishing paint. A few *kelarai* panels have faded paint due to direct sunlight, but they are still in a small amount (see Table 4). Overall, all the *kelarai* panels of Rumah Kutai I are strong and well intact.



Fig. 7. Front View of Rumah Kutai I
Source: Authors (2022)

Table 4. Rumah Kutai I's *kelarai* motif

<i>Kelarai</i> Motif on Rumah Kutai I	Location Of Motif	<i>Kelarai</i> Motif
	i) Full height <i>kelarai</i> wall	 <i>Sesiku keluang</i>
	ii) <i>Tebar layar</i>	

Source: Authors (2022)


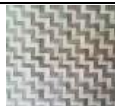
4) Rumah Limas Perak (Kompleks Sejarah Pasir Salak)

The wall of Rumah Limas Perak is made up from one *kelarai* motif, which is *sesiku keluang* motif (see Fig. 8). The *sesiku keluang* motif is placed as the wall at the window level for both building floors. The *kelarai* panels are not placed as the doors and windows. Based on the author's observations, the *kelarai* wall of Rumah Limas Perak is in poor condition. The *kelarai* panel has worn out completely with no sign of finishing paint (see Table 5). Some panel has been torn and deteriorated, especially on the left side of the house, where only a few panels of *kelarai* are left, while the others are missing. Surviving *kelarai* panels where its motif can still be seen are located on the first floor, protected by the roof.



Fig. 8. Front View of Rumah Limas Perak
Source: Authors (2022)

Table 5. Rumah Limas Perak's *kelarai* motif





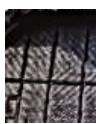














Kelarai Motif on Rumah Limas Perak	Location of Motif	Kelarai Motif
	Wall at the window's level	 <i>Sesiku keluang</i>

Source: Authors (2022)

C. Visual Documentation and Analysis of Malay Houses

The following table provides visual documentation by listing the evidence of several other traditional Malay houses with *kelarai* elements discovered in books, newspapers, webpages, and social media. The table is a reference for the *kelarai* art seen in the 16 traditional Malay houses (see Table 6). It will be used to examine further and evaluate the condition, varieties of *kelarai* motifs, and placement of the motif on the houses. The evaluation was made based on the photos available in the stated sources.

Table 6. *Kelarai* in Malay House

No.	Malay Houses	Location of the Building and Condition of the Motif	Kelarai Motif	
1.		Bota, Perak (Latitude: 4.3461 Longitude: 100.8849) Motif condition: poor condition	 <i>Tapak Tujuh Berkembang on the Tebar Layar</i>	 <i>Pucuk Rebung on the building wall</i>
2.		Pasir Salak, Perak (Latitude: 4.2217 Longitude: 100.9253) Motif condition: good condition	 *cannot be identified on the building wall	
3.		Kuala Kangsar, Perak (Latitude: 4.7714 Longitude: 100.9603) Motif condition: poor condition	 <i>Tapak Lima Berkandang on the door</i>	 <i>Songket Putih on the building wall</i>
4.		Kuala Kangsar, Perak (Latitude: 4.7622 Longitude: 100.9672) Motif condition: good condition	 <i>Songket Putih On The Tebar Layar and building wall- *cannot be identified</i>	
5.		Layang-Layang Kanan, Mukim Layang-Layang, Perak Motif condition: good condition	 <i>Bunga Berembang on the Tebar Layar</i>	 <i>Tapak Gajah on the building wall</i>
6.		Kuala Kangsar, Perak Motif condition: good condition	 <i>Tapak Gajah, on the building wall below the window</i>	 <i>Pucuk Rebung on the building wall above the window</i>
7.		Sungai Siput, Kuala Kangsar, Perak Motif condition: good condition	 <i>Tapak Tujuh Berkembang on the Tebar Layar</i>	 <i>Tapak Gajah on the building wall and windows</i>

Source: Authors (2022)

Table 6. Continued

No.	Malay Houses	Location of the Building and Condition of the Motif	Kelarai Motif	
8.		Kota Lama Kiri, Kuala Kangsar, Perak Motif condition: poor condition	 *Cannot Be Identified On The Tebar Layar	 Songket Hitam on the building wall
9.		Kampung Kodiang Lama, Kedah Motif condition: condition is unknown	 Tampuk Jantung on the building wall	
10.		Kampung Kodiang Lama, Kedah Motif condition: condition is unknown	 Tapak Tujuh Berkembang on the building wall	
11.		Bagan Datuk, Perak Motif condition: demolished	 Sesiku Keluang, Pucuk Rebung on the building wall	
12.		Sungai Siputeh, Selama, Perak Motif condition: good condition	 Tapak Gajah on the window and ceiling	 Tapak Lima Berkandang on the building wall
13.		Mini Malaysia & Asean Cultural Park, Melaka Motif condition: good condition	 Sesiku Keluang on the building wall	
14.		Mini Malaysia & Asean Cultural Park, Melaka Motif condition: good condition	 Sesiku Keluang on the building wall	
15.		Mini Malaysia & Asean Cultural Park, Melaka Motif condition: good condition	 Sesiku Keluang on the building wall	
16.		Kg. Lembah, Kota Lama Kanan, Perak Motif condition: Good condition	 Tapak Gajah on the building wall below the window	 Pucuk Rebung on the building wall above the window

Source: Authors (2022)

III. RESULTS AND DISCUSSION

A. Discussion on Literature Review

Based on the literature review that was done, there are many motifs of *kelarai* that can be seen in both products and architecture. According to Aziz Deraman (2005), as quoted by Mariam and Marzuki (2021), “The Malay way of life is largely grounded on the principles of Islam, including its customs, paraphernalia, and ritual. Therefore, the *kelarai* design patterns on the woven mats produced by the Malays on the East Coast are mostly inspired by nature”. In general, *kelarai* motifs are categorized by flora motives, fauna motives, abstract motives, and people’s name motives (Ismail & Nawawi, 2011) (see Fig. 9).

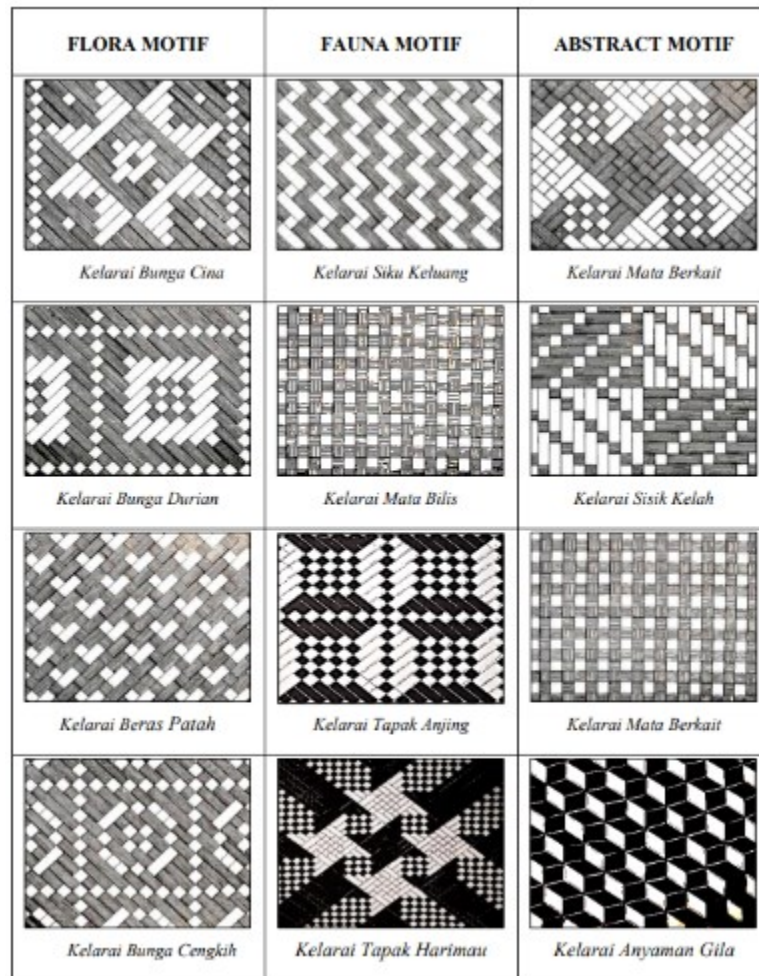


Fig. 9. Examples of *Kelarai* Motif

Source: Perbadanan Kemajuan Kraftangan Malaysia (1989)

According to Zainon (1986) and Umar et al. (2020), *kelarai* is a woven craft made from bamboo and used to produce walls and partitions of a house. In Perak, *kelarai* are made using *bertam* and is called *tepas*. *Kelarai* in Perlis is made from bamboo, and the strips are much bigger and suitable with the characteristics of the material. Therefore, *kelarai* (or *tepas*) is sturdier, stronger, and rougher compared to *mengkuang* products (Ismail et al., 2013). The differences between the two are that *kelarai* are weaved in a horizontal and vertical line, and *kelarai* for the product is in a diagonal line.

All *kelarai* motifs are based on the elements of nature, which are flora and fauna. It is known that many traditional craft motifs are also influenced by flora and fauna. *Kelarai* motif, on the other hand, has its own unique identity. Due to the weaving technique involved, all *kelarai* motifs are in geometrical form (Zakaria et al., 2018). Besides that, *kelarai* also has motifs related to people’s names or places where the motifs were created (Zainon, 1986). The following list (Table 7) is a compilation of the *kelarai* motifs for products and architecture as listed in the book *Rekabentuk Kraftangan Melayu Tradisi* (Zainon, 1986).

Table 7. List Name of *Kelarai* Motif

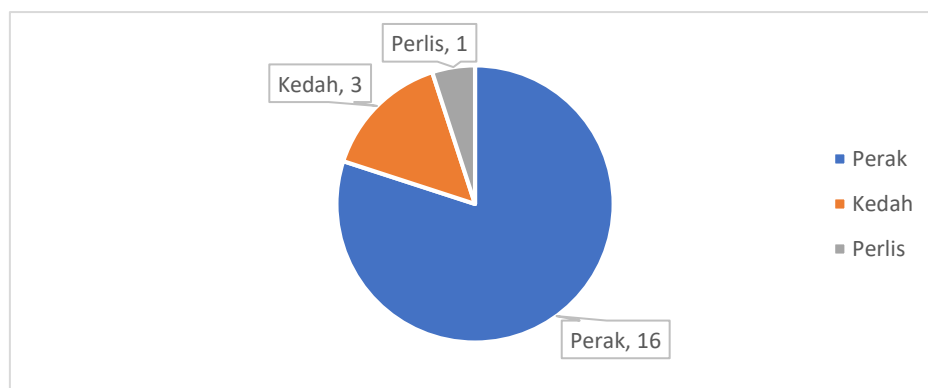
Type of Kelarai Motif	Name of Kelarai Motif	
Flora	1. Bunga Pecah Lapan	12. Bunga Gedung
	2. Bunga Berembang	13. Bunga Kunder
	3. Bunga Cina	14. Bunga Rumpit
	4. Bunga Cempaka	15. Tampuk Pinang
	5. Bunga Durian	16. Tampuk Pinang Berantai
	6. Bunga Tanjung	17. Tampuk Jantung
	7. Bunga Cengkih	18. Tampuk Manggis
	8. Bunga Cengkih Beranak	19. Pucuk Rebung
	9. Bunga Mempelas	20. Pucuk di Dalam
	10. Bunga Melur	21. Berakar
	11. Bunga Ator	
Fauna	1. Kepala Gajah	10. Mata Ketitir
	2. Tapak Anjing	11. Mata Punai
	3. Tapak Harimau	12. Anak Ikan
	4. Buntut Siput	13. Tulang Ikan
	5. Mata Berkait	14. Sisik Kelah
	6. Berhati	15. Pusat Belanak
	7. Berkaki	16. Kepala Lalat
	8. Siku Keluang	17. Belalang Cucuk
	9. Jari Kedidi	
People And Places' Name	1. Cik Kedah	4. Sambas
	2. Cik Ku Daud	5. Sambas di Dalam
	3. Mak Mek	
Abstract	1. Belah Ketupat	4. Swastika
	2. Kisar Mengiri	5. Tumbu Gila
	3. Beras Patah	6. Madu Manis

Source: Zainon (1986)

B. Analysis and Findings

Data and information collected from the site visit and visual documentation of the 20 traditional Malay architecture were analyzed, and its findings are further discussed. The data also determines the types of *kelarai* motifs explicitly used in architecture, different from those used for *kelarai* products. The relationship between *kelarai* motifs and their location in Malay architecture is discussed to obtain the significance of each *kelarai* motif found in this study.

1) Location of Building

**Fig. 10.** Location of Building With *Kelarai*

Source: Authors (2022)

From the information shown in the pie chart, Perak is the state with the most found evidence of *Kelarai* in Malay architecture, with 16 buildings (see Fig. 10). Kedah has three pieces of evidence of *Kelarai* architecture, while Perlis has only one building. Perak, with the highest count in this research, is probably due to the available resource, where 'Rumah Kutai: Documentation of Memories' (Rashid & Amir, 2017) book is used. Moreover, evidence of *Kelarai* found in Mini Malaysia and ASEAN

Cultural Park, Melaka, are counted in their building types. For example, Perlis Long Roofed House in Melaka is counted as Perlis' evidence. Other than that, Rumah Kutai in Perak is more synonym with the use of *kelarai* wall than the other Malay traditional buildings.

2) The Varieties of Kelarai Motifs Applied in Malay Architecture

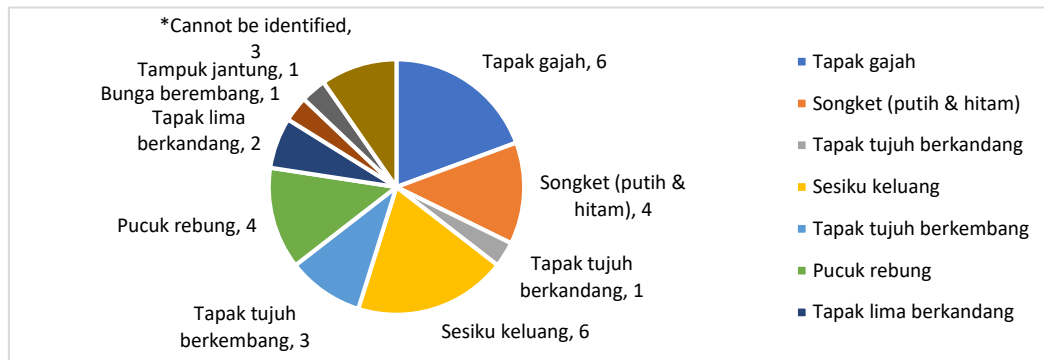


Fig. 11. *Kelarai* Motif in Malay Architecture
Source: Authors (2022)

The evidence from this pie chart shows that the most common *kelarai* motifs used in Malay architecture are *tapak gajah* and *sesiku keluang* motifs, with six counts (see Fig. 11). Of the 20 listed Malay architecture, *tapak tujuh berkandang*, *tampuk jantung* and *bunga berembang* motifs are the least common motifs used, with each mentioned motif having one piece of evidence. There are also three *kelarai* motifs from the visual documentation that cannot be identified due to poor image quality and lack of resources.

3) Location of Motif

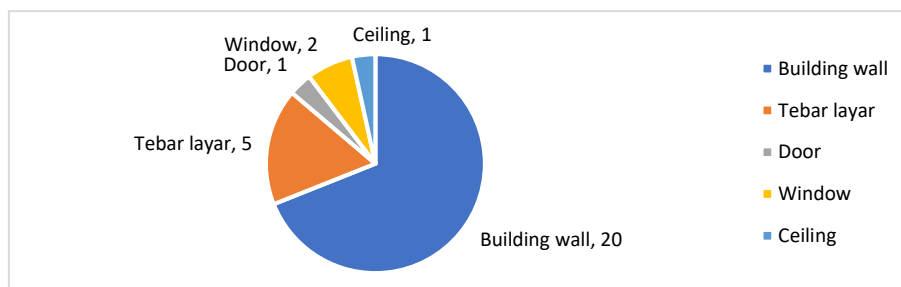


Fig. 12. Location of *Kelarai* Motif
Source: Authors (2022)

As shown in the pie chart, all 20 listed Malay architectures use *Kelarai* as their wall. *Kelarai* motif placed as *tebar layar* is in the second place with five pieces of evidence (see Fig. 12). There are two buildings with *Kelarai* motif as its window. In addition, there is also one piece of evidence found for *Kelarai* door and another one for *Kelarai* ceiling.

4) Kelarai Motifs and Its Location in Malay Architecture

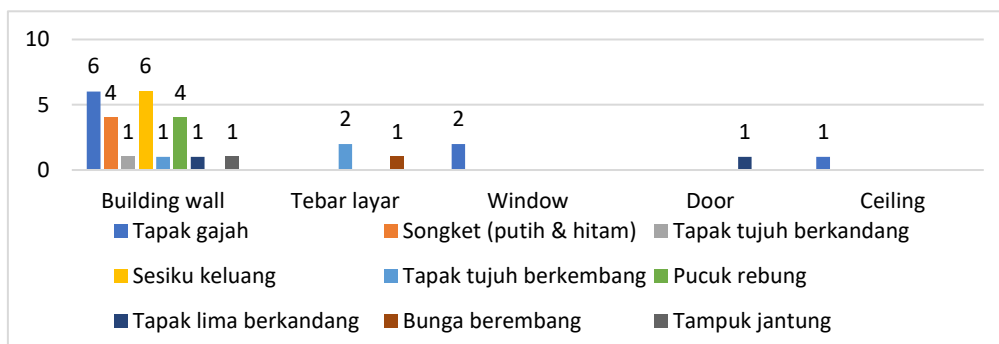


Fig. 13. *Kelarai* Motif and Its Location
Source: Authors (2022)

The bar chart indicates the relationship between *kelarai* motifs found and their location in the building (see Fig. 13). It can be observed that *sesiku keluang* and *tapak gajah* motifs are the most common motif used as the building wall, with a count of six pieces of evidence for both motifs. The second most common motifs for the building wall are *songket* and *pucuk rebung* motifs, with four pieces of evidence for each motif. The least common motifs used for the building wall are *tapak tujuh berkandang*, *tapak tujuh berkembang*, *tapak lima berkandang* and *tampuk jantung* motifs.

Next, the highest count for *tebar layar*'s motif is *tapak tujuh berkembang* with two counts, while *bunga berembang* motif with ne count. The motif used for the window in the Malay architecture is *tapak gajah*, with two pieces of evidence found. In addition, there is evidence of *kelarai* door with *tapak lima berkandang* motif and one for *kelarai* ceiling with *tapak gajah* motif.

IV. CONCLUSION

Reviving the traditional motifs is one of the ways to save the tangible heritage from being lost in modern development. Moreover, documenting and preserving the information from the past through product design will promote or even introduce the art of *kelarai* to the public. The public will be able to learn more and become interested in applying the art of *kelarai* in their daily life, continuing the art from the people of the past.

The analysis and findings that have been found show the significance of *kelarai* motif in architecture. The site visit has tremendously helped the author see the values of *kelarai* in architecture and the importance of preserving the art from being forgotten. As has been found in the research, the types of *kelarai* motifs used in traditional Malay architecture can be categorized differently from *kelarai* motifs used on products. While various *kelarai* motifs have been recorded, *kelarai* motifs used in architecture definitely have their own principles and charm that set them apart from *kelarai* motifs on products.

It is hoped that future research will cover this study's general framework more. The data and information can then be detailed and cover the analysis of the symbolism of *kelarai* motif and its location. Further research may be done on the preservation method of *kelarai* in architecture; according to *kelarai* artisans, *kelarai* walls can survive up to 100 years. Next, research should be done on the 20 listed traditional Malay architecture with *kelarai* elements in this study to know the status or condition of the structures, as well as the symbolism of the motif. More research can be done on *the kelarai* walls in architecture, especially on the thermal comfort provided by *kelarai* in traditional architecture. Lastly, the application of *kelarai* should be promoted to ensure the art of *kelarai* is celebrated by the new generation and passed down to the next.

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