Petungan and proportion in Javanese-Yogyakarta architecture

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Abstract

Primbon is a book containing predictions (calculation of good days, bad days, and so on); a book that compiles various Javanese knowledge, containing formulas of magic (rajah, mantras, prayers, dream interpretation), a complicated number system to calculate auspicious days for holding celebrations, building houses, starting trips and taking care of all kinds of important activities, both for individuals and communities. By researching Petungan, the knowledge of Archipelago Architecture can be enriched, especially concerning measurement and proportion in architectural design. It is also hoped that this research will be able to erase the impression of cliché and the act of violating religion so that Petungan can become a design component in the world of architecture, especially Archipelago Architecture. This research is explorative. The main source of the research is the Kawruh Kambeng manuscript in Javanese and Indonesian. The location of the fieldwork is D.I. Yogyakarta because the Kawruh Kambeng manuscript is a manuscript originating from D.I. Yogyakarta. The current research is only focused on village folk houses, and the houses studied are still limited to Limasan houses. Based on the analysis of these 12 Limasan buildings, there are three Petungan used for building houses, namely Kawruh Kambeng, Primbon Betaljemur Adammakmur, and Primbon Sabda Nata. The use of Betaljemur Adammakmur turned out to be the main reference for the 12 Limasan buildings in Tungkluk Hamlet. About Kawruh Kambeng, it can be seen that Petungan in Kawruh Kambeng also corresponds to the buildings in Tungkluk.

Keywords: Javanese Architecture, Limasan, Petungan, Proportion.

1. Introduction

The undeniable fact is that European Architecture is different from Nusantara Architecture (until now, many still refer to it as Traditional Architecture or Vernacular Architecture). European Architecture is dominated by buildings made of stone or brick, while Nusantara Architecture is made of wood. Since the study and knowledge of European Architecture is much more complete and comprehensive than that of Archipelago Architecture, it is only right that the knowledge and understanding of Archipelago Architecture is also carried out so that it becomes equal to the knowledge and understanding of European Architecture. This specifically refers to architecture in Europe and the Archipelago before 1800, given that there was no contact between the two architectures at that time. Meanwhile, realizing that Archipelago Architecture is characterized by a diversity of styles, within such limitations, the choice of Javanese Architecture was made. The choice of Javanese Architecture is still narrowed down, but it sharpens the study so that it only points to one design factor in architecture, namely size, which in the Javanese Architectural environment is known as Petungan.

An opportunity that should be utilized as much as possible is the fact that in the 21st century, there is still a wide variety of Javanese architecture to be found - from the Purwokerto area in the western part of Central Java to the Blitar area in East Java. There have been many studies and research on Javanese Architecture, but there is still very little attention to one of the materials of Javanese Architecture, namely the architectural knowledge of Javanese Architecture, and more specifically the knowledge material known in the Javanese environment as Petungan. To this day, most of the writings on Javanese architecture are still written in the cultural knowledge group, and it is characterized by the designation of Traditional Architecture or Vernacular Architecture.

As it is known, every time Javanese people make a building, they cannot be separated from Petungan, and therefore it is known that until the 1970s, Primbon books containing Petungan could still be easily found. Since materials about Petungan are not difficult to find, Petungan can be used as an object of research. Although it is easily available, interest in Petungan is not encouraging because Petungan is not seen as unscientific Javanese architectural material, and some even classify it as cliché and an act of violating religion.

By researching Petungan, the knowledge of Archipelago Architecture can be enriched, especially concerning measurement and proportion in architectural design. It is also hoped that this research will be able to erase the impression of cliché and the act of violating religion so that Petungan can become a design component in the world of architecture, especially Archipelago Architecture.

2. Literature Review

During its development, architecture was conceived as an art of beauty. As a work of art, architecture is designed with consideration of geographical location, natural potential, and technology used in the community. These aspects result in different forms for each building based on the existing conditions and culture, one of which is Javanese Architecture.

This architecture is one of complexity and involves several clumps/disciplines (Unwin, 1997). This is because Javanese architecture is rich in meaning that is seen from historical, social, religious, aesthetic, symbolic, and others (Wibowo et al., 2020).

It must be recognized that within the sphere of Javanese Traditional Architecture and Javanese Vernacular Architecture, publications and discussions on Javanese Architecture are arguably the most numerous. As with most Traditional Architecture in Indonesia, the abundance of writings and publications is presented in terms of cultural knowledge (Pitana, 2018). Not many people want to realize that the review of the cultural family is different from the review of the architectural knowledge family. In Traditional Architecture, architecture is subordinated to European Architecture, making it a second-class citizen in its own country. This view is completely different from that of the architectural school, which places architecture in the archipelago on an equal footing with European Classical Architecture (Prijotomo, 2022).

The building types in the Javanese community, following the original Javanese texts on building, such as Kawruh Kalang, Kawruh Griya, and the like are Tajug, Joglo, Limasan, and Kampung. These designations are different from books and writings that do not use these Javanese texts but are strongly suspected to be sourced from cultural studies of Javanese society in the 19th century and from researcher interviews with Javanese people. The existing designations in the community are Tajug, Joglo, Limasan, and Kampung (Prijotomo, 1998).

A building of the Limasan type commonly called Omah Limasan is a single building characterized by a roof that resembles a pyramid or shield. The Limasan roof consists of four sides, with the two sides having a steep slope, and the two front and back sides being flatter. The center of the roof consists of two shapes, an isosceles triangle on the sides and a trapezoid on the front-back. Limasan has a roof sector consisting of three parts, namely the elephant/brunjung which is the most central part, followed by the pananggap, and ends with the panitih/emper which is the outermost part of the roof. The appearance and shape of Limasan closely resemble the Joglo type, but what distinguishes the two types is the longer ridge of Limasan, which causes the roof plate to be longer as well (Wibowo et al., 2020). Limasan buildings are generally used as houses for middle to upper-middle-class people. In Yogyakarta, Limasan buildings can also be found in various villages, so it can be seen that many villagers have middle-class status.

2.1 Petungan
Primbon is a book containing predictions (calculation of good days, bad days, and so on); a book that compiles various Javanese knowledge, containing formulas of magic (rajah, mantras, prayers, dream interpretation), a complicated number system to calculate auspicious days for holding celebrations, building houses, starting trips and taking care of all kinds of important activities, both for individuals and communities. The general meaning derived from the KBBI is different from the definition of Primbon as stated by Ami Arfianti, namely: The study of Primbon, which addresses the formation of mass buildings in Javanese houses, indicates that Primbon is intended for the upper class of society or aristocratic, not for common people (Arfianti et al., 2022).

Javanese society highly values the dimension of feeling. Here feeling implies the relationship between humans and nature, as well as humans and other humans. Therefore, Javanese architectural styles are inseparable from this feeling and no less important, are Primbon and Petungan (Saputra, 2022).

Meanwhile, Primbon is one of the sources of information about Javanese architecture that is not yet certain of its age. Although the study of architecture in Primbon is not much, from the small amount of information, an in-depth study of Javanese Architecture can be done, which is called Petungan. Examples of some Primbon books that contain Petungan, for example, are Primbon Betaljemur Adammakna, Primbon Sabda Pandhita, Primbon Jawa Makara, and Primbon Pandita Sabda Nata. In this research, Primbon Betaljemur Adammakn and Primbon Sabda Nata were used. Both Primbon accompanied the object of research, namely the Kawruh Kambeng manuscript.

3. Research Methods

This research is explorative. The main source of the research is the Kawruh Kambeng manuscript in Javanese and Indonesian. The location of the fieldwork is D.I. Yogyakarta because the Kawruh Kambeng manuscript is a manuscript originating from D.I. Yogyakarta. The current research is only focused on village folk houses, and the houses studied are still limited to Limasan houses. The steps of the organized research will include:

Collecting data and conducting preliminary literature study: selecting and utilizing research objects (selecting buildings based on age, completeness of building parts, ease of measuring).

Measuring and drawing: (measuring with meter and laser; measuring axis size and rong size; conducted on all parts of the house; conducted by 2 surveyors).
Analyze and conclude: (building a proportion system; validating with ethnomathematics; creating architectural drawings; deriving conclusions and suggestions).

This research is directed to produce outputs in the form of confirmation of measurement results (Petungan system) comparatively between pecak and metrics.

4. Findings and Discussion
4.1 Research Source
This research explores the size of building parts in Kawruh Kambeng as a Yogyakarta manuscript (Anindita & Djatiningrat, 2013). This size exploration is associated with two limitations: firstly, the building object factor is only centered on the Limasan Desa type; and secondly, the existence of Primbon Yogya and Surakarta which shows differences (thus, assuming the existence of Petungan and Primbon Yogyakarta Surakarta). Regarding Primbon Yogyakarta, a confirmation has been obtained, namely Primbon Betaljemur Adammakna which is openly said to be sourced from a manuscript owned by Patih Danuredjo, Yogyakarta (Tjakraningrat, 1994). Regarding Primbon Surakarta, it is still strongly suspected that R. Tanojo was a Javanese cultural expert from Surakarta, so it is strongly suspected that the Primbon-Primbon compiled was Primbon Surakarta. In this research, R. Tanojo's edits used are Primbon Sabda Nata (Tanojo, 1972). With the Yogyakarta and Surakarta assumptions established, it is possible to state here what Petungan items will be handled in the measurement of Limasan Desa buildings. The Petungan-by-Petungan descriptions used in this research are ordered from Kawruh Kambeng, followed by Primbon Betaljemur Adammakna, and ending with Primbon Sabda Nata. The use of Primbon-Primbon in this study is primarily to help confirm whether Kawruh Kambeng is from Yogyakarta or Surakarta. Appendix 1 shows the passages from these three sources used in this study.

4.2 Size
Integral to the operation of Petungan is the unit of measure used to determine the length-width and height-low of a part of the building frame. The three Petungan sources used in this research both specify the anthropomorphic unit of measure pecak, a unit equal to the length of the sole of an adult's foot. The metric unit of measure is 32 to 36.5 cm. This metric size is obtained from the average foot size of adults who are residents or owners of the Limasan houses studied in Tungkluk village. Realizing that the inhabitants and owners who are still alive today are not necessarily the ones whose feet are used as the unit of measure for the house where they live, all houses were measured using pecak of 32, 33, 34, 35, 36, 36.5 cm and some used 37 cm. By applying all of these metric units of measure, it is possible that the occupants and owners of a house that is measured are not in accordance with the Petungan instructions, but in accordance with other metric units of measure. So, for example, if the owner and occupants have a metric unit of measure of 34 cm, this unit of measure is not in accordance with the Petungan instructions; it is the unit of measure of 36 cm that is in accordance with the Petungan instructions.

From the research guidelines as outlined above, the measurement of Limasan houses in Tungkluk village resulted in tables showing the Petungan elements in the three Petungan sources. The entire measurement can be seen in the Appendix, and for the sake of further discussion, the Limasan houses of Mr. Sar, Mr. Yat and Mr. Asmo were used. Mr. Sar's house was built in the mid-20th century, Mr. Yat's is the oldest building in Tungkluk village, around the turn of the 20th century, and the third is Mr. Asmo's house, which was built after the mid-20th century.

4.3 Petungan and Limasan measurement in Tungkluk

Although 8 residential houses were measured, a total of 12 Limasan building clusters were measured. This is because some houses have two Limasan building clusters. Each Limasan building cluster was measured using a laser-meter (which is of course metric-based). The metric measurements obtained were then converted into Petungan using different units of pecak size, from 32 cm to 36.5-37 cm. This conversion was carried out on the Petungan sources Kawruh Kambeng, Betaljemur Adammakna and Sagda Nata. The following will present a case of a Limasan building from Mr. Sar's house that was successfully measured and converted.

1) Kawruh Kambeng

Because there is still a mismatch in the calculation of length, width, and number of usuk in Betaljemur Adammakna, calculations are carried out on Kawruh Kambeng. The calculations are the width and length of the house and the number of stiles.

In the conclusion section, the research findings are summarized, without additional new interpretations. In this section, the novelty of the research, the strengths and weaknesses of the research, and recommendations for future research can also be written.

Table 1. The result of the size and *calculation of* Mr. Sar's house

| About | size | 32 cm | | 33 cm | | 34 cm | | 35 cm | | 36 cm | | 36.5 cm | |
		Results	remaining	Results	remaining	Results	remaining	Results	remaining	Results	remaining	Results	remaining
Pangeret Blandar Calculation													
Building Width													
Teacher	373	12	2	12	2	11	1	11	1	11	1	11	1
Response	913,8	29	4	28	3	27	2	27	1	27	2	26	1
Emper	1290.2	41	1	40	5	18	3	37	2	38	3	36	1
Building Length													
Teacher	763	24	4	24	4	23	3	22	2	23	3	21	1
Response	1261,2	40	5	39	4	38	3	37	2	37	2	35	5
Emper	1488,5	47	2	46	1	44	4	43	3	44	4	41	1

The width of the building shows the conformity with KK for the size of the pecak: 34, 35, 35, and 36.4 cm. The situation is different from the length of the building which turns out that none of them can meet the requirements of Petungan 1 sari for houses, only pecak = 36.5 cm which can correspond to the length of the guru and emper.

By setting 1 pecak = 36.5 cm, it can be said from the table above that Mr. Sar's house applies Petungan Kawruh Kambeng for its building frame. To determine the building structure, only the pananggap and emper sectors fulfill the Kawruh Kambeng; the guru sector does not use the Kawruh Kambeng calculation.

2) Betaljemur Adammakna

The Petungan calculations used were Petungan numbers 187 and 188 regarding the number of usuk and 189 regarding the Omah frame (see Appendix).

In calculation number 189 about the house frame, six sizes of pecak were used with the result that pecak 36 had the most matches compared to other pecak numbers with several calculations close to the omah-mburi character. Therefore, a calculation with pecak 36.5 was added, with the result of seven calculations matching the character. The ones that do not match are the length of the pananggap and the height of the saka guru, with both having the character of pokah or intended for a barn or warehouse. As for calculation number 188, there is not a single match with omah-mburi, making it impossible to use this calculation on Mr. Sar's house. In contrast, calculation number 187 shows character matches with all of them having good or medium results.

3) Sabda Nata

Sabda Nata is Petungan that has a different reference than Betaljemur Adammakna and Kawruh Kambeng so it can complement the lack of discussion in other Primbon or as a possible reference for other Primbon (see Appendix).

Table 2. Conclusion of Mr. Sar's house *calculation*

SOAL	KK	BA	SN				
			H	F	A	R	I
Omah Framework							
Length of omah							
Teacher	✓	✓					
Response	✓	✓					
Emper	✓	✓		✓			
Width of omah							
Teacher	✓	✓					
Response							
Emper	✓	✓					
Saka Height							
Teacher						✓	✓
Response	✓					✓	✓
Emper	✓					✓	✓

SOAL	KK	BA	
		188	187
NUMBER OF USUK			
Teacher			
Front length			✓
Back extension			✓
Pamendek left			✓
Pamendek right			✓
Response			
Front length			✓
Back extension	✓		✓
Pamendek left	✓		✓
Pamendek right			✓
Emper			
Front length	✓		✓
Back extension			✓
Pamendek left			✓
Pamendek right	✓		✓

In the calculation of the length and width of the house frame, there is no match in calculation H, while in calculation F there is one match in the width of the overhang. As for the calculation of the saka height, there is no match in calculation A, on the other hand, calculations E and I show a suitable character in both, with good results.

By combining the three Petungan tables, we get the following table of the Petungan size of Mr. Sar's house:

Based on the calculations in the three Petungan, it is likely that Mr. Sar's house used Primbon Betaljemur Adammakna as a construction reference, with a total of seven matches in the calculation of building frame number 189 and a match in the entire calculation of usuk number 187. In the Sabda Nata calculation, there are matches in all saka height calculations with both E and I calculations, so there is a possibility of using the Primbon for pole/saka size. While in Kawruh Kambeng, there is a similar match in the calculation of length and width, but on the contrary, there is a lack of match in the size of the usuk.

Table 3. Conclusion of the Use of Petungan Limasan in Tungkluk Hamlet

Object	Sector	KK	BA	SN	More		Object	Sector	KK	BA	SN	More
Mr. Sar (36.5cm)	Width	✓	✓		*Response*		Ms. Yan (35.5cm)	Width	✓	✓	✓	
	Long	✓	✓					Long	✓	✓		
	High		✓	✓				High		✓		
	Usuk		✓					Usuk		✓		*Teacher*
Mr. Ngad (32.5cm) FRONT	Width	✓	✓		*Emper*		Mr. Ngad (32.5cm) BACK	Width	✓	✓		*Response*
	Long	✓	✓					Long	✓	✓		
	High		✓	✓				High		✓		*Teacher*
	Usuk		✓					Usuk		✓		
Mr. Yat (37cm) FRONT	Width	✓	✓	✓			Mr. Yat (37cm) BACK	Width	✓	✓	✓	
	Long	✓	✓		*Teacher*			Long	✓	✓		
	High		✓					High		✓		*Teacher, Emper*
	Usuk		✓	✓				Usuk		✓		
Mbah Asmo (35cm) FRONT	Width	✓	✓	✓			Mbah Asmo (35cm) BACK	Width	✓	✓		*Emper*
	Long	✓	✓					Long	✓	✓		*Teacher*
	High		✓		*Teacher*			High		✓		*Teacher*
	Usuk		✓					Usuk		✓		
Mr. Sum (34cm) WEST LIMASAN	Width	✓	✓	✓			Mr. Sum (36cm) EAST LIMASAN	Width	✓	✓	✓	
	Long	✓	✓		*Teacher*			Long	✓	✓		*Teacher*
	High		✓		*Teacher*			High		✓		*Teacher, Emper*
	Usuk		✓					Usuk		✓		
Mr. Wid (35cm) OVERVIEW	Width		✓	✓	*Emper*		Mr. Wid (35cm) LINTRING	Width			✓	
	Long	✓	✓	✓	*Teacher*			Long	✓	✓		
	High	✓	✓		*Teacher, Emper*			High		✓	✓	
	Usuk		✓					Usuk		✓		

4.4 The summary of the calculation on Limasan

The calculation of Petungan Kawruh Kambeng, Betaljemur Adammakmur, and Sabda Nata on the twelve Limasan in Tungkluk Hamlet can be presented by doing certain engineering. One of the techniques taken is to try to show that the 12 Tungkluk houses all refer to Primbon Betaljemur Adammakna as a reference. Here the engineering shows results with the proviso that the unit of measure of the pecak attached to the Petungan is not uniform, so the unit of measure is different. Table 3 shows the results of the Petungan engineering that refers to Primbon Betaljemur Adammakna:

All of the Limasan buildings in Dusun Tungkluk that were measured could reveal several things about the Petungan and the location of the Petungan source. From the table created as a summary of all the Petungan in the three texts, several points can be made here.

First, by examining the 'origin' of the Kawruh Kambeng text. The application of Petungan shows that not all Petungan items can be referred to the Kawruh Kambeng manuscript. Therefore, it can be said that further research needs to be done to ascertain the source of the Kawruh Kambeng manuscript. For the record, the Kawruh Kambeng manuscript is a manuscript that was copied in Javanese script on the order of the director of the Sonobudojo Museum, Th. G. Pigeaud, in 1934 (Prijotomo & Rachmawati, 1995). The manuscript in the Javanese script is kept in this museum.

Secondly, Tungkluk Village places Primbon Betaljemur Adammakna as the main reference. As Primbon originates from Yogyakarta, there should be no objection to this. Indeed, it can be noted here that there are residents whose origins are from Surakarta, but still show the use of Primbon Betaljemur Adammakna. It should be noted here that the ability to be able to fill in all of the predictions in Primbon Betaljemur Adammaakna by noting that the metric unit of measure used for measurement is not one unit. There is a unit of measure that ranges from 32 to 36.5cm for Petungan pecak. Thus, allegiance to Petungan pecak is more important than the metric unit of measure that points to the sole of the occupant's foot.

Thirdly, Primbon Sabda Nata has received very little 'response' as the Petungan for the Limasan building in Tungkluk. From one perspective, this is because it is not popular in Yogyakarta.

Based on the table, it can be concluded that Petungan Betaljemur Adammakmur dominates the calculations on the elements of each Limasan, with Kawruh Kambeng as an alternative use for length and width, and Sabda Nata as a complement, especially on the width and height of the Limasan.

The use of the three Petungan with the dominance of Betaljemur Adammakmur is found in the Limasan of Bapak Sar, Mbak Yan, the front of Bapak Ngad, the front of Bapak Yat, the front of Mbah Asmo, Mbak Sul in both Limasan, Pak Sum in both Limasan and Pak Wid in both Limasan. Some Limasan such as the rear Limasan of Mr. Ngad, Mr. Yat, and Mbah Asmo do not use Sabda Nata as a complement. In Mbak Sul's Limasan, the use of Betaljemur Adammakna and Sabda Nata complement each other, so neither dominates. Finally, in Mr. Wid's Lintring the use of Sabda Nata is more dominant than the other Petungan. The pecak

used in Limasan varies from 31.5 cm to 37 cm, with 35 cm being the most widely used pecak in five out of fourteen Limasan.

Except for Mr. Wid's Lintring building, the omah measured had several elements that did not match any of the Petungan tested. When ordered by sector, it can be seen that the guru section has the most incompatibilities, 11 out of 12 Limasan, followed by the emper sector and finally the pananggap sector. The guru section in Dusun Tungkluk likely uses another Petungan, especially in the Saka height section (10 mismatches out of 12).

The mismatch in the overhang and width of the overhang can be caused by differences in measurements with the field, or the size of the overhang that has been covered by the floor so that it is different from the original size. In the width section, the adjustment and addition of Limasan gandeng affects the width of the empere to be larger or smaller than the original size, as can be seen from this case which only occurs in Limasan gandeng. The four mismatches in the response pan do not have a pattern in the elements or sectors, so the possible causes are differences in field measurements or adjustments after renovation or the addition of Limasan (Frick, 1997). Broadly speaking, the use of Petungan for each Limasan is strongly influenced by the size of the pecak used, the craftsman who built it, the year it was built, the shape of the Limasan (double or single), the history of removal, addition, and renovation, and the geographical conditions of Tungkluk Hamlet which was once part of Surakarta. In addition, with this data, Primbon Betaljemur Adammakna is indeed specific to Yogyakarta with a match of calculation and character in almost all parts of Limasan.

5. Conclusions and Suggestions
5.1 Conclusions
Based on the analysis of these 12 Limasan buildings, there are three Petungan used for building houses, namely Kawruh Kambeng, Primbon Betaljemur Adammakmur, and Primbon Sabda Nata. The use of Betaljemur Adammakmur turned out to be the main reference for the 12 Limasan buildings in Tungkluk Hamlet. About Kawruh Kambeng, it can be seen that Petungan in Kawruh Kambeng also corresponds to the buildings in Tungkluk. Whether Sabda Nata can be said to be optional in Yogyakarta; and whether it applies to Surakarta remains to be researched. From interviews with Tungkluk residents, it appears that the geography of Tungkluk Hamlet was once part of Surakarta. The incompatibility of Sabda Nata with Tungkluk indicates the possibility that this hamlet left Surakarta and used Yogyakarta as its Petungan.

In the Limasan buildings that have been studied, three main aspects produce variations, namely structural elements, non-structural elements, and spatial patterns. The variations obtained from structural elements are six kinds of Limasan variations consisting of single Limasan, single Limasan with Kampung, double Limasan, double Limasan with Kampung, horizontal double Limasan with Kampung, and Limasan with Lintring and Kampung.

In constructing Javanese buildings, Primbon plays a major role in influencing the proportions that appear in each Limasan. Each building has its size, but still shows the same proportions that make up the size of the Limasan building. The measurements and their interpretation have shown that there are no elements of belief, mysticism, or cliché. All Petungan

measurements were done using the common reasoning used in measuring and valuing building objects.

Although Petungan and Primbon are considered unscientific, it is evident from the analysis that they can influence the shape, appearance, room pattern, and solidity. Size, proportion, and materials could have been used as a reference in avoiding rain through the slope of the roof, or capturing natural light and air through open wall planes. Based on interviews with all homeowners, almost all structures and parts of the Limasan have survived just as they were built, with the age of the building varying from 40 years to 120 years. This proves that the use of Petungan and Primbon is no longer, once again, limited to mystical beliefs but acts as a guideline for building a solid house that accommodates the activities of the users and can adapt to changes over time.

5.2 Suggestions
This research proves that Petungan has indeed been used in making buildings until the early 20th century. Further research that expands the scope to include Limasan Bangsawan and Limasan Kraton will undoubtedly be able to bring out one of the design principles in Javanese Architecture and Archipelago Architecture, especially in terms of proportion (Dietrich, 1997). Realizing that this research is still limited to Yogyakarta villages and Yogyakarta-oriented Primbon and Petungan sources, similar research could be conducted in the Surakarta area. Such a study would confirm whether Javanese architecture and Surakarta architecture are distinct, or whether they can both be called Javanese architecture without adding Yogyakarta or Surakarta. This needs to be done considering that in arts and traditions, there are many differences between Yogyakarta and Surakarta.
No less important is the study of inch, feet, yard, and mile units of measure, which were also originally based on the size of the human body. If the unit of measure is allowed and can be uni√ersal, why can't pecak, asta, cengkal and fathom be uni√ersal, especially if the Javanese have been standardized (standardized) as is done by the inch, feet, yards, and miles.

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