

## Conference Paper

### The Form of Traditional House of Coastal Area at Tanjung Bumi Bangkalan as The Basic Preservation of Madura Traditional Architecture

<sup>1</sup> M. Safeyah\*, <sup>1</sup> E. Elviana, <sup>2</sup> N. Takarini, <sup>3</sup> A. Sutejo

<sup>1</sup> Architecture, Faculty of Architecture and Design, Universitas Pembangunan Nasional “Veteran” Surabaya, East Java, Indonesia

<sup>2</sup> Management, Faculty of Architecture and Design, Universitas Pembangunan Nasional “Veteran” Surabaya, East Java, Indonesia

<sup>3</sup> Visual Communication Design, Faculty of Architecture and Design, Universitas Pembangunan Nasional “Veteran” Surabaya, East Java, Indonesia

---

#### Abstract

The purpose of the research is to find the traditional house form at Tanjung Bumi Bangkalan, thus it can be used as the basis to preserve the traditional architecture of Madura especially Bangkalan. This study is a descriptive research with qualitative method. Data obtained through interviews, photography, measurements, and sketches. Sample taken by purposive sampling. The data analyzed using principle of design that are; unity, balance, proportion, emphasis, and rhythm. Traditional houses in Tanjung Bumi coastal area consist of *Bangsai* type and *Trompesan* type. The house has rectangular form. The unity of the building formed by combining column, wall, space, material texture and colour. The house façade formed symmetrically with the point of interest at the roof that dominated the entire form. The proportion of the roof 1.5 times than the size of the house spatial. The space arrangements dominated by *Sedana* type, which comprise of two rooms. Space arrangements of *Sedana* type is lined to the side or lined backward. A high aesthetic value is derived from the creation of elements which considering principle of design.

**Keywords:** architecture preservation, coastal area, principle of design, traditional architecture,

---

#### INTRODUCTION

Madura has interesting traditional architecture, not less fascinating compare with other Indonesian traditional architecture in Indonesia. Traditional architecture is a building that has manufacturing technique, function, structure, and decoration, with distinctive features. Traditional architecture also defines as a place where community life is inherited from generation to generation. The traditional architecture of Madura is called *Tanean Lanjang*. *Tanean Lanjang* is a collection of houses, and other ancillary buildings that are united with a long yard. One *Tanean Lanjang* consists of several families who have familial ties.

Physical form of the house is influenced by non-physical factors of the society, such as economic factors, education, and technology, social and cultural systems. Meanwhile, the behaviors of the house inhabitants are influenced by social interaction, socio-economic orientation, and socio-culture. House is a product that comes from same social and cultural system. A very influential factor to the form of the house is social and cultural system. Traditional architecture is accumulation of an enormous knowledge of form, materials and social condition. Traditional architecture is also a reflection of the embodiment of the people tradition and culture who lives within.

---

\* Corresponding author

Email address: [muchlisiniyati.ar@upnjatim.ac.id](mailto:muchlisiniyati.ar@upnjatim.ac.id)

How to cite this article: Safeyah M, Elviana E, Takarini N, Sutejo A (2018) The Form of Traditional House of Coastal Area at Tanjung Bumi Bangkalan as The Basic Preservation of Madura Traditional Architecture. *International Seminar of Research Month Science and Technology for People Empowerment*. NST Proceedings. pages 22-29. doi: 10.11594/nstp.2019.0204.

Traditional architecture is formed based on social cultural ties and its natural environment. The relationship of the house with its environment to the physical environment is influenced by natural condition, climate, and availability of building materials (Muluk & Burhany, 2017; Baca & Lopez, 2017). *Tanean Lanjang* is formed from various aspect includes familial ties, economic condition, social and culture, and also physical environment.

*Tanean Lanjang* exists in 4 districts of Madura that are Bangkalan, Sampang, Pamekasan, and Sumenep. Those *Tanean Lanjang* in each district have special characteristics. Tanjung Bumi District is one of the areas of Bangkalan Regency, which is largely a coastal area. *Tanean Lanjang* traditional architecture is still widely available in the coastal area of Tanjung Bumi. The particular traditional architecture in Tanjung Bumi is in accordance with the opinion of that cultural factors that develop in society are not static, but always evolves dynamically. Thus, there is no single house, which is really similar, even though they stand side by side.

The dynamic of culture brings people to adapt to nature and its environment. Hence, traditional architecture is not static; it is develop along with the development of time, social, culture and the development of technology (Baca & Lopez, 2017). *Tanean Lanjang* in Tanjung Bumi develop along with the transformation of the economic, social and culture. Thus far *Tanean Lanjang* with their various transformation, can be seen in coastal area of Tanjung Bumi Bangkalan. The design of *Langgar* (place of worship) and its long yard as a unique characteristic of *Tanean Lanjang* is still preserved. While the design of the house have changes a lot, although there are still elements that are preserved. The economic, social, and cultural developments in the coastal area of Tanjung Bumi affect the changes and the steadiness of traditional house form. The forms and typological characteristics of traditional architecture are the product of the accumulation of preserved social practices. At the same time, traditional architecture is brought into the present with new experiences (Baca & Lopez, 2017). Form is a space and scope of a structure activity, which can be digest by sense and mind, also fulfill the aspects of structure-construction ( Salura, 2010). The form-generating elements are includes dots, lines, surface, and volumes. The principles of arranging the order of form are including axis, symmetry, hierarchy, datum, rhythm, repetition, and transformation (Ching, 2007). Socio-cultural aspects, religion and physical environment influence the form of the house. Socio-cultural aspects are cultural factors widely and it can change along the social development of society. On the traditional architecture, the form of the house is decided according to mutual agreement, by considering the tradition from generation to generation (Muluk & Burhany, 2017). The religious aspect of the home that the symbolic and cosmological aspect serves to maintain metabolic equilibrium, and ritual activity (Rapoport, 1969).

The form of traditional house in Tanjung Bumi coastal area has its own aesthetic. The aesthetic in architecture define as a pleasing value of the eyes and mind in the form of values of form and expression. The aesthetic of form is real and measurable, while the aesthetic of expression is abstract. The principles of shape aesthetic are includes harmony, balance, proportion and scale. Expression aesthetic emerge from experience of seeing or observing, thus the media to gain aesthetic of expression is the form of architecture (Admadjaja, 2003). The criteria of aesthetic value are based on elements of design and principles of design. These criteria are able to provide beauty experience to those who see and use it. The elements of design include dots, lines, surface, spaces, color and texture. While the principles of design includes harmony, balance, contrast, proportion, emphasis, and rhythm (Sofiana, 2015). The embodiment of aesthetic should consider the principle of design (Sani, *et al.*, 2015). The form of an aesthetic building is a result of elements and principles of design. Design elements such as dots, lines, surface and spaces. Design principle as unity, proportion, balance, rhythm, and emphasis (Dahlani, 2008). Three basic aesthetic elements are unity, dominance, and balance. Unity consists of unity in diversity, symmetry, rhythm, harmony, unity of purpose, and wholeness in combination (Djelantik, 1999).

The coastal area of Tanjung Bumi has typical *Tanean Lanjang* architecture. Along with the economic, social, and cultural development of the community, the form of a traditional house has also developed. Although there are many changes in the form of the house, but there is still constancy. Hence the study aims to find the form of a traditional house in Tanjung Bumi Bangkalan. The form of traditional house is analyzed based on design principles. The finding of traditional houses of Tanjung Bumi coastal area is expected to be used as a basis for preserving the traditional architecture of Madura especially Bangkalan.

## METHODS

This study is a descriptive research that describes and interprets the object of the research in a systematic, factual and accurate way (Best & Khan, 1998). The form of the traditional house in Tanjung Bumi coastal area was explored carefully and thoroughly. This research use qualitative method that focus on the real, complex and detail of social life (Groat & Wang, 2002). Primary data was taken through observation and interview. The observation was done through taking photos, measuring and sketching (Leedy, 2002). Interview with open question was also done to the house owner to gain detail information. Secondary data gained from books, and academic article was also used to strengthen the discussion.

The buildings in *Tanean Lanjang* consist of houses, *Langgars*, kitchen and cages. The object of the research is a traditional house, which located in Tanjung Bumi coastal area. It is include village of Banyu Sangka, Macajah, Telaga Biru, Paseseh, dan Bumi Anyar. The research object was chosen by purposive sampling, which has criteria as follow: located in coastal area; house is a part of *Tanean Lanjang*; the house has traditional form; the house age is more than 50 years; the originality of the house is still preserve. From those criterion there were 6 object of *Tanean Lanjang*, comprise of 1 object in Telaga Biru village, 2 objects in Paseseh village, and 3 objects in Bumi Anyar village. From those 6 *Tanean Lanjang* objects, there are 11 traditional houses 11. These research objects was analyzed based on principle of design includes unity, balance, contrast, proportion, emphasis, and rhythm.

## RESULT AND DISCUSSION

### Tanean Lanjang

*Tanean Lanjang* derives from the word *tanean*, which means yard, while *lanjang* is long. *Tanean Lanjang* is a long courtyard in the middle, surrounded by houses and supporting buildings. Supporting buildings consist of *Langgar*, kitchen, and cage. The entire occupants in *Tanean Lanjang* have family ties. In a group of *Tanean Lanjang* there are three generations of one family, includes parent, married daughters, and grandchildren of the married daughters (Sa'dan, 2016). The *tanean* form is elongated in East-West direction. *Langgar* is located in the West end. The house orientation is facing North and South direction. *Tanean* is function as place for daily activities for all the occupants, such as playground for children, socialize between family member, family ritual activities, and other social activities which involves many people, such as wedding celebration, funeral ceremony, recitation and others. In the coastal area of Tanjung Bumi *tanean* is also functioned as place for batik making activities.

*Tanean Lanjang* in this object of study mostly (4 objects) inhabited by three generations that have family ties from the mother side. The long yard in the middle is functions as a binder of the houses and supporting buildings. All research objects have supporting buildings in the form of kitchen, and cage. In 1 object of study, there is no *Langgar* available, and 1 object of research, the *Langgar* is not functioned. Traditional older houses are oriented towards the North and South, while newly built houses are oriented towards the North and South as well as the West and East. The entire study objects have supporting buildings that are kitchen and cage. One (1) of the research object has no *Langgar* and another research object has *Langgar* which not functioned. Traditional older houses are oriented towards the North and South, while newly built houses are oriented towards the North and South as well as the West and East (Figure-1).

*Tanean Lanjang* in Madura is formed from family ties from women side. This is due to the marriage system that follows the matrilocal residency pattern, that married women will remain in the home or yard of the parents, while the married man will move into the house or yard of his father in law (Sa'dan, 2016). This study found that 4 *Tanean Lanjang* are inhabited by the families of daughters. 2 *Tanean Lanjang*, besides being inhabited by the daughters are also inhabited by sons. This is due to a paradigm shift that there is no difference between daughters and sons.

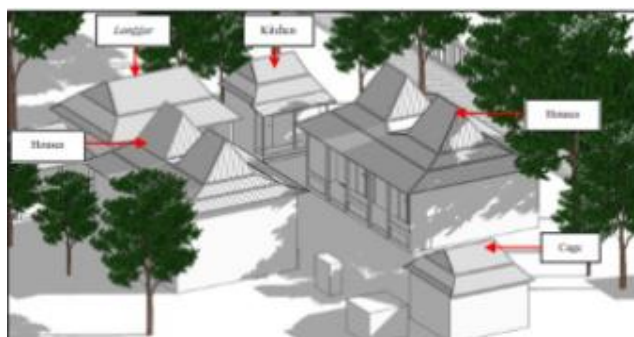


Figure 1. *Tanean Lanjang* in the Coastal Area of Tanjung Bumi Bangkalan, the Courtyard in the Middle, Surrounded by Houses, *Langgar*, Kitchen and Cage.

### The Form and Space

The form of traditional Madurese house is a result of the development of traditional Javanese architecture. Madura architecture is influenced by the factors such as Islam religion, economic conditions, social, culture climate and geographical conditions. There is also several culture that influences Madura architecture that are Madurese, Javanese, Dutch colonial and Chinese (Asmarini *et al.* 2016) The form of the house on *Tanean Lanjang* in this study is a rectangle. The long side of the house is in accordance with the direction of *tanean* that is elongated on the East-West direction. This position is dominated more. The form of the buildings consists of surface elements in the form of walls on its four sides. The material of the wall is from plastered brick or limestone, wood, and woven bamboo. Opening on the wall surface is very limited, positioned on the front part functioned as door and window. Sometimes there are openings on the side or back that is functioned for the door. The form of the building, which is a variation of the Javanese building, consists of *Bangsai* type, *Pegun*, and *Trompesan*. The roof shape of the *Bangsai* type is a variation from *Joglo*, *Pegun* is from *Limasan*, and *Trompesan* comes from *Kampung Srotongan* type, which is given "teritisan" on both sides (Wiryoprawiro, 1986). The roof of *Bangsai* type has similar roof with *Joglo* that truncated on its left and right, while *Pegun* similar with *Limasan* roof which has additional roof on its front and back part (Tulistyantoro, 2005). *Trompesan* type is typical village roof with three parts fracture. From 11 traditional houses in this research object there were 2 houses which has *Trompesan* type and 9 houses with *Bangsai* type (Figure-2).



Figure 2. Houses of *Bangsai* (left) and *Trompesan* (right) Type Most in the Coastal Area of Tanjung Bumi.

Spatial arrangement of Madurese traditional house consists of *Slodoran* and *Sedana* type. The *Slodoran* room arrangement consists of one room with two doors and one porch and also one exit. While *Sedana* has two rooms and two doors but has one porch with one exit. The interior of the room is closed and dark, the available openings often in a form of door without window. The existing room is functioned as bedroom (Tulistyantoro, 2005). In the object of this research, the amount of the room consists of one room, two rooms, and three rooms. The number of consists of one door, two doors, three doors, and four doors. The room serves as bedroom, and multifunction room that is used

as a clothing cupboard, dining room and others. Room arrangement on two-room type not only lined side by side but also lined backwards (Figure-3). This study also found that there are eight (8) houses that has two rooms, 2 houses has one room, and one house has three rooms. While there are two houses with one door, 5 houses with 2 doors, 3 houses with 3 doors, and 1 houses with 4 doors . The spatial arrangement on the research object has different spatial arrangement in Pamekasan area (Wiryoprawiro, 1986), in Sampang (Tulistyantoro, 2005), and in Pamekasan (Asmarini *et.al.*, 2016). The specialty of traditional house in Tanjung Bumi coastal area reinforces opinion and Baca & Lopez (2017).

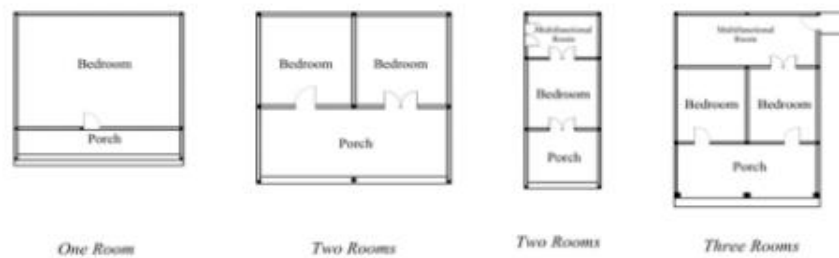


Figure 3. Arrangement and Number of Rooms in a Traditional House in The Coastal Area of Tanjung Bumi.

All the object study has one porch that located in the front of the house. The porch is semi open, closed on the left-right side. There are 2 houses that have fences on the porch. The fences are made from wood and bricks that also function as a seat. The width of the porch is at least 2 meters. This size is suitable for a multifunction porch, which can be used as a place to receive guests, place of recitation, to make batik, and others. Often, house with wooden construction have prolonged roof on the left and right part. The room under the roof of side porch is used to store fishing gear, firewood, as place to hang clothes or batik, and as a second porch.

### Principle of Design

Unity in this context is integration that is the arrangement of some elements into one unified whole and harmonious. The entire elements are mutually supportive and form a complete unity, neither excessive nor inadequate. The principle of unity is related with visual composition that embodied by the visual elements. The composition without diversity can lead to monotonous and boring, diversity without order leads to chaos (Ching, 2007). The principle of unity is the principle of relationship, similarity, and suitability between elements of design. If one or several elements of the design have a relation then the unity can be achieved. Traditional houses in coastal area of Tanjung Bumi consist of three parts: the top or head is the roof, the center or body is the room, and the bottom or foot is the floor. The shape of roof, room, and floor is integrated as a whole. The dimensions of the roof look dominant balanced with the dynamic finishing shape. The roof-supporting columns, windows, and doors as elements of façade, became a counterweight to the dominant roof. Floor with glazed colored tile cover with vibrant motive to balance the body part. The whole unity is derived is achieved from a combination of solid and hollow, vibrant and silence, rough and smooth, striking and neutral, bright and dark on all elements of design (Figure-4).



Figure 4. Integration of Design Elements Creating Unity in Traditional House Forms.



Proportion is one of the architectural aesthetic formers that can be explained rationally. Proportion or comparison is the critical determinant of design success, through the proportion, the balance of design elements can be perceived (Kusmiati, 2004). Proportion is a harmonious relation between parts of the whole entity (Ching, 2007). A good proportion lays in the relation between parts of the buildings, or between parts of the building and the building as a whole. Proportion serves to know the position of the object towards the object itself or towards the surrounding. Overall the traditional houses, both type *Bangsai* and *Trompesan* in this study, has a good proportion. The roof dimension predominates by proportion  $\pm 1.5$  times, body proportion  $\pm 1$  time, and foot  $\pm 0.5$  times. The proportion on the dominating roof is balanced with the proportion of the room, which is supported by a quite high floor. Dimensions of the larger roof are balanced with dynamic roof shape. The roof on *Bangsai* and *Trompesan* type are consists of 2 - 3 part with different slope angle. The angle at the top part of the roof is  $45^{\circ}$ - $60^{\circ}$ , body part is  $25^{\circ}$ - $30^{\circ}$ , and bottom part is  $15^{\circ}$ - $20^{\circ}$ . Aesthetic through the proportion of house shape on the object study can be enjoyed because the placement of the house on quite wide courtyard.

Balance is the real quality of the object, where the visual attention of the two parts on the two sides of the equilibrium center is the same. The balance illustrates the harmony of parts arrangement of the building, or the state of balance between the different parts. The visual appeal lies in the whole section with the center of balance. On this object of research using a symmetrical balance. The balance line lies in the middle, which divides between two parts equally. The symmetrical balance is seen on the building appearance and on the blueprint of the house. The symmetrical balance on the house appearance is reinforced by the placement of elements of window, door, floor pattern, and the location of columns. Windows and doors have an average of two leaves, which is often called as *Kupu Tarung* (butterfly). The use of symmetrical balance in this research objects gives the impression of a formal and authoritative appearance (Figure-5).

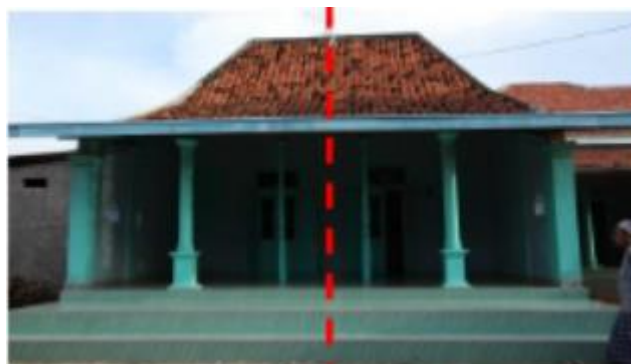


Figure 5. The Symmetrical Balance is Reinforced by the Placement of Window, Doors, Floor Patterns, and Column

Emphasis is an important or striking thing of a form or space according to its size. Emphasis can be achieved through repetition, contrast, arrangement, and unexpected thing. As with other traditional houses in Indonesia, roof is the dominant element of the building. The emphasis of research object lies in the shape of the roof. The roof of the *Bangsai* type is called the *Pacenan*, on *Pegun* type is called *Jadrih*, and type *Trompesan* is called *Trompesan* (Tulistyantoro, 2005). The roof of *Bangsai* type is a development of *Joglo Lawakan* and *Joglo Sinom*. On the side part and back part (the roof) look as if it is cut, and on the front part the eaves is given. *Bangsai* house, which is a development from *Joglo Lawakan*, is characterized by the roof as log as 1 module that is seen as two piles. While *Joglo Sinom* have three stacks of roof (Asmarini *et al.*, 2016). On the research object, truncated *Joglo* roof dominated as much 82%, and *Trompesan* roof 18%. Amongst the research object, there is only one research object that found having horn decorations on its roof. The dominant long shaped roof is form of behavior in adapting to climate conditions.

Rhythm is the repetition of design elements on a regular or harmonic basis. The elements of design include; dots, lines, surfaces, form, spaces, textures, and colors. Continuous repetition without any variation can lead to

boredom. In wooden-walled houses, the rhythm is generated from a row of vertically arranged wooden planks. The resulting rhythm derives from not monotonous repetition of wooden board. This is due to the dynamic form of the wall surface. On the sidewall, the dynamics of the wall is formed by the roofline. The rhythm of the body of the building is caused by the repetitions of columns of the same shape, color, and material. The window and door, which fill the front wall has remove monotony. The use of 20 cm x 20 cm tiles repeatedly which interspersed with variations of patterns becomes the attractions of the floor.

## CONCLUSION

Traditional architecture in the Tanjung Bumi coastal area has its own uniqueness. The long courtyard in the middle of the group of buildings has the function as a playground for children, social activities, ritual activities, and batik making activities. *Bangsai* house type is more dominant than the type of *Trompesan*. The roof on the type of *Bangsai* is similar to *Joglo* roof, which is cut off on the side, and the *Trompesan* type is a development from Kampung roof, which has fracture form. Space or room arrangement consists of *Slodoran* type and developed *Sedana* type. *Sedana* type has 2 rooms, even more. In general the arrangement of *Sedana* type is lined to the side, while in Tanjung Bumi there is a composition that lined backward. The house is only have one Porch at the front, facing the *tanean*, with width of at least 2 meters, it accommodates various activities including batik production activities. Unity is derived from the combination of columns, walls, spaces, form, textures, and colors. The arrangement of roofs, spaces and floors produces a proportional form. A symmetrical balance is seen from the appearance and the arrangement of the space. Emphasis lies in the dominant form of the roof, and the finishing of the front elevation. Rhythm is on the finishing of dynamic appearance. Traditional house in Tanjung Bumi coastal area is a form of expression of economic, social, culture and physical factors.

## ACKNOWLEDGEMENT

The authors would like to thank the Indonesian Ministry of Higher Education for the financial support of PTUPT in 2018.

## REFERENCES

- Baca, L. F. F. G., Lopez, F. J. S. 2017. Traditional Architecture and Sustainable Conservation. *Journal of Cultural Heritage Management and Sustainable Development. Emerald Publishing Limited, 8(2)*, 194-206.
- Best, J.W., Khan, J. V. (1998). *Research in Education. Amerika: A Viacom Company.*
- Ching, F. D. K. (2007). *Architecture Form, Space And Order 3<sup>rd</sup> Edition.* New Jersey: John Wiley & Sons, Inc.
- Dahlhani. (2008). Studi Penerapan Prinsip-Prinsip Desain Pada Masjid Noor Banjarmasin. *Info-Teknik, 9(1)*, 82-98.
- Djelantik, A. M. (1999). *Estetika-Sebuah Pengantar.* Bandung: MSPI.
- Groat, L. N., Wang, D. (2002). *Architectural Research Methods.* USA: John Wiley & Sons, Inc.
- Kusmiati, K. (2004). *Dimensi Estetika pada Karya Arsitektur dan Disain.* Jakarta: Djambatan.
- Leedy, P. D. (2002). *Practical Research: Planning and Design, 6th Edition.* USA: Merrill, an Imprint of Prentice Hall, New Jersey.
- Muluk, M., Burhany, N. R. (2017). *Tambi Tipo-Morfologi Permukiman Etnis Lore dan Kehidupan Budayanya.* Yogyakarta: Ombak.
- Prijotomo, J. (2010). *Prijotomo Membenahi Arsitektur Nusantara.* Surabaya: PT. Wastu Laras Grafika.
- Rapoport, A. (1969). *House Form and Culture.* Englewood Cliffs, New Jersey: Prentice Hall.
- Sa'dan, M. (2016). Tradisi Perkawinan Matrilokal Madura-Akulturasinya Adat dan Hukum Islam. *Jurnal Kebudayaan Islam, 14(1)*, 129-138.
- Sofiana, Y. (2015). Memahami Estetika Dari Sudut Pandang Desain Interior. *Humaniora, 6(3)*, 339-347.
- Salura, P. (2010). *Arsitektur yang Membodohkan.* Bandung: CSS Publishing.
- Sani, A., Supriyadi, B., Rukayah, R. S. (2015). Bentuk Dan Proporsi Pada Perwujudan Arsitektur Vernakular Bugis, Studi Kasus: Bola Soba Di Kota Watampone, Sulawesi Selatan. *Teknik Sipil & Perencanaan, 17(2)*, 99-110.
- Tulistyantoro, L. (2005). Makna Ruang pada Tanean Panjang di Madura. *Dimensi Interior, 3(2)*, 137-152.

Wiryoprawiro, Z. M. (1986). *Arsitektur Tradisional Madura Sumenep dengan Pendekatan Historis dan Deskriptif*. Laboratorium *Arsitektur Tradisional*. Surabaya: FTSP ITS.