

EXPLORING LOCAL WISDOM IN APPROACHING THE NATURE AND ENVIRONMENT OF SPACE ACCORDING TO THE LOCAL ORDER AND IMAGE

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Abstract

The local nature and the environment of a place are important factors in creating a work of architecture that matches the functions and image of its users. These factors are related to their context and become a separate issue, faced by all societies. Different natures and environments will express different works in accordance with their uses and image, relevant to their respective context. There is no work that can create itself, every architectural work is created according to the order and the image of society.

The Indonesian society in general, specifically the traditional society of madura is a society living with a unique local nature and environment. The dry and barren soil and Limestone Mountains, with very little rainfall is a reality that must be faced and resolved by the people. They have been able to create a work of architecture that is in accordance with their society's local order and image in the tanean lanjjang, the traditional house of the Madura people. Tanean lanjjang is an architectural work that has been tested for a very long period of time and has become a part of the society's life. The wisdom to adapt and adopt the local nature and environment is reflected in the composition and zoning of space, in the dimensions and shape of the building, and the construction and use of materials on the

tanean lanjjang. The Madura society has been able to prove that the work of their ancestors is a great heritage that is full of local wisdom in accordance with the order and the image of the local nature and environment that is reflected not only on the physical aspects but also on the non-physical aspects. The society's cosmology is the non-physical aspect, a local wisdom that believes in achieving harmony with the local nature and the environment. This is reflected through the sample studied in this paper on the research of the physical and non physical aspects of the tanean lanjjang.

Introduction

Indonesia is an archipelagic country consisting of many islands with high average of rainfall. Cultural richness is very diverse, this because Indonesia consists of hundreds of hundred ethnic groups. Broadly, according Kuntjaraningrat¹, Indonesia is the same as the world community in general. Indonesian society consists of groups of people such as primordial gatherers, marine society, and paddy fields society. Gatherer society is a society that lives from hunting; the community is not familiar with intensive agriculture and water treatment. Maritime community is the people who live in coastal waters, living between sea and land. They have a different way of life, and different perspective of understanding the nature as well. Fields society is the people who live mobile, following the fields that they plant. Their lives depend on nature instead of water. Meanwhile, rice field society is a group of people who live depending to the management of water. This means that water is an important factor in their life.

Some of them that will be taken in this paper are Madurese and Toraja tribe. Both have a specification that is not owned by the other tribes in Indonesia. Both tribes have the same primordial cosmology, it is the fields. Having different natural conditions, they are different in the image and expression as well.

Madurese people with a distinctive language and culture are located in the eastern part of Java Island. That place has a dry natural condition with very little rainfall when

compared to Indonesia as a whole. While, the geographical conditions of the islands are stretching from the west to the east, consisting of ground limestone and coral. So, it makes unfertile. Also, this area does not have volcanoes. However, on the other side, this area has the potential of great nature, natural gas, manganese, etc. Even, natural gas appears in several areas among residential population². They have a traditional house called *Tanean Lajang* which means pages in length, or a cluster of houses which have a yard in the middle³. Cosmologically, Madurese people are the people who go in groups of fields, but Kuntowijoyo classified them more specifically in groups of dost. Their lives depends on the dost owned.

Toraja tribe is located on the island of Celebes, located in the middle of mountains having cold temperature. In contrast to the Madura, Madurese region is lush and mountainous areas that have many sources of water. Visually Toraja traditional house is the family. Houses are built and owned by one big family, and called *Tongkonan*⁴. In the perspective of Cosmology, Toraja society is grouped into the field society, seen from the way of life and visual expression. However, if traced further from its origins, it shows that they are the maritime group. Maritime communities are open, but the three principles of good people still expressed through the arrangement of space and pattern diversity owned.

¹ Kuntjaraningrat, PENGANTAR ATROPOLOGI, pokok pokok etnografi II, Rineka Cipta, Jakarta, 1998 : 32-84

² Kuntowijoyo, Perubahan Sosial dalam Masyarakat Agraris: MADURA 1984-1940, Mata Bangsa, Jogjakarta, 200: 224-40

³ Department Pendidikan dan Kebudayaan RI, ADAT ISTIADAT DAERAH JAWA TIMUR, Proyek Pengkajian dan Pembinaan Nilai Nilai Budaya Pusat Diektorat Sejarah dan Nilai Traditional Direktorat Jenderal! Kebudayaan, Jakarta : 178-185

⁴ Daniel Tulak, KADA DISEDAN SARONG BISARA DITOKE' TAMBANE BAKA, Sialoka, Rantepao-Toraja Utara, 2009:7-20. Myrtha Soeroto, TORAJA, Pustaka Budya & Arsitektur, Balai Pustaka, Jakarta, 2003: 36-46.

Use and image

Nature and the environment of certain location is an important factor in creating a work of architecture to be consistent with the order and the image of their users. According to Mangunwijaya⁵, the house is always the image of the human builders, meaning that the house is always breathed by human life, nature and trends of the trend, and the ideal goals. So each work, it should always reflect the order and its image. According to Mangunwijaya use is utilization or has the power to improve life for the residents. The image itself is an expression of the work which becomes an expression for the user and/or manufacturer's own building, a mirror image of not only physical factors but more emphasizes the image of the spiritual factor. These factors must be in accordance with the text and context, respectively. That it has become its certain problems faced by many people of the world. Nature and different environments, will express the work of a different order and in accordance with each image. This means that it is appropriate to the context, respectively. Nothing works created by itself; each piece in the architectural image is created following the order and its society.

Traditional communities in Indonesia are very diverse community. They own and maintain cosmology which is reflected as a value spiritual done in real life day. House as a place of activity throughout life, is not built only by instinct but to express the wisdom and the image of the society. The local thinking is the wisdom that underlies all work in accordance with the image and pointless. For example, buildings for worship are always placed on top of the mountain, or always concentrated in one point; it is the expression of the human picture,

about how to look nature. Pictures of gods are on a hill or mountain; it is the expression that best fits his situation. Floor elevation, distance and spatial division are a reflection of spiritual values⁶.

Cosmologi of field and maritime

Understanding the views of primordial cosmology Indonesian society in general, it is not separated from the direction of wind. This means that the eyes of the wind direction have decisive positions facing building lived. In addition the composition of space is also determined by the cardinal directions. Cardinal directions have different characters from each other. All are reflected in the visualization of his work. Besides the elements, both vertical and horizontal hierarchy is also reflected in there. Primordial cosmological concept of field community is a dualism or duumvirate. Dualism is a contradiction of elements of the element that has the opposite properties, such as Men-Women, Strong-Weak, Dry-Wet, Closed-Open, Outside-In, Top-Down, Front-Rear, Right, Left, Heaven-Earth, East-West, North-South, the Sun-Moon. This dualism must be neutralized through a central element to achieve a balance or harmony. It can be neutralized through the medium of connecting between the two things that contradict it. In understanding and interpreting the space primordial society, it is true that they also adopt dualism, which is to follow the pattern of conflict in order to achieve harmony. It means that the position of the space in a

⁵ Y.B. Mangunwijaya, *WACTU CITRA, Pengantar ke Ilmu Budaya Bentuk Arsitektur Sendi-sendi Filsafat beserta Contoh-contoh Praktis*, Gramedia Pustaka Utama, Jakarta, 1995:23-88

⁶ *ibid* p. 96

certain direction and hierarchy has particular value as well⁷.

Field communities have views of the cosmos into three parts, namely the underworld or the real world of the profane, the transcendent world of intermediaries, and the world over of the sacred. The underworld or the real world is a world of human life, outside, open. Intermediary world is a world where humans achieve a sacred order must be through mediums for reaching into the holy or the top. World over is a world that can not be touched by the living. The concept of this kind of thinking is clearly visible through the structure of life as well as its spatial arrangement pattern. In macro view, it appears at the system environment or the city of Point-Tomb-Mount (Prohibition).

Climate as determinant of image and use

According to Tropo⁸, a lot of research on tropical building reveals that tropical building design should consider the following factors: wind, sun, rain, and earthquake. Wind speed from breeze to strong breeze, the Beaufort scale is mentioned between 1 and 12. Changes in the wind that is so drastic provide a very significant change for the convenience of users. The sun, which shines throughout the nearly 12 hours, also gives a different effect. It means it has the effect of light or radiation of the sun from morning till evening. Radiation that stings at a certain angle gives advantage on one side and disadvantage on the other side. Similarly, the rain, one side benefits it and

the other side it gives the loss due to the activities to be disrupted. The rain accompanied by winds of change also gives comfort to the user. Earthquake is an activity that continued for several times a year. It is important to note that Indonesia is located on the meeting area between the Pacific and Asian plates. The possibility of earthquake is very big, sometimes even deadly earthquake occurs.

The wind in theory should be able to be utilized either by conducting or continuing into the room. Wind direction from north to south and vice versa can give a positive impact on who can use them. This situation must be conditioned so that the benefits of this nature can be cultivated optimally.

Direction toward the sun throughout the year with a fixed direction from east westward, giving an impact on the direction of the building. It is because the heat source is coming from the east and heading west. This heat source is causing glare and radiation, which is high enough so as not to give comfort to its users. It is similar to the sun from the west. This excessive sun radiation needs to be overcome to provide comfort for its users.

Research on tropical building by Tropo observed a positive effect for users, factors of wind, sun and humidity are important factors to determine the effectiveness and image. Most of the traditional houses in Indonesia are adaptable to the environment. This means that these homes fulfill the aspects and image. High rainfall and wind conditions of high humidity also define the system environment to the existing traditional buildings in Indonesia⁹. Although this idea originated in Indonesia, but in northern Australia Tropo gave special attention to the adaptation of the buildings in

⁷Jakob Sumardjo, ARKEOLOGI BUDAYA INDONESIA, Pelacakan Hermeneutis-Historis terhadap Artefak Artefak Kebudayaan Indonesia, Qalam, Jogjakarta, 2002: 16-17

⁸Goad, Philip, TROPO ARCHITECTS, Periplus Edition, Singapore, 2005:12-15

⁹Ibid. p. 25

this region. Utilizing the existing system by providing shade to prevent the influence of the sun and excessive rain are applied properly. Meanwhile, the use of modern materials becomes a consideration to be applied into his work. The use of shade with without closing the air flow is one way to keep the temperature getting low but the air humidity is maintained. While shade that is long and low is able to not only ward off the influence of the sun but also able to provide protection when there is rain. Apparently the local wisdom of a traditional thought in Indonesia has been adopted by Tropo, an Australia architect. He developed an adaptation of buildings in the Australian environment by using new materials / modern¹⁰

Understanding image and use a local wisdom

Understanding the description Mangunwijaya, buildings and space are based not only prepared to fulfill all aspects of function but rather fulfills the image. For example buildings with different shapes and heights will have a different image. Meanwhile the position of cardinal directions also defines a different image. This can be seen from each tribe in Indonesia. For example, buildings of worship in Madura, in addition to fulfilling aspect as a place of worship, the aspect of the image is shown by the elevated floor in a form of a stage. In Toraja, in the back room Tongkonan is used for people who are respected, or parent. It has a higher position placement of the floor,

even to respect people who are already dead, they are placed there¹¹.

Understanding the image on tongkonan and tanean

Such phenomenon is a phenomenon that occurs commonly in people of Indonesia in the past. In *Tanean*, this value expresses one of visualizations of cosmology from the society. Understanding aspects of the space is determined by understanding the orientation of the sun. North direction is opposite to the south. North means holy, sacred, used for woman or child who is not in puberty. It fulfills aspects of the image as a place of convergence of the power of the sacred ritual of male and female, medium between the world's top and bottom. East- west position is interpreted as the beginning and end of life reflect the composition of the status of the family, the shrine is terminated by a break, the members of the family sequence starting from the oldest west then eastward to the youngest. This hierarchy is based not on age but the sequence of marriage. Thus, marriage is an important status in the family of Madura. West direction is understood as expressed through a hierarchy of death in the family home layout. Positions of *Langgar*¹² in the western part of the platform structure provide its own image as a special and sacred space. However, there are different expressions when *Langgar* in Madura is using horizontal ridge, this can be understood because *Langgar* is not purely religious buildings but it is also used as a bedroom and living room for men. While the general image

¹⁰ Ibid p. 24

¹¹ Myrtha soeroto, TORAJA, Pusaka Budaya & Arsitektur, Balai Pustaka, Jakarta, 2003: 45-46

¹² *Langgar* is small moosque, with the size is 3 x3 M Sq

building of worship always images, image that leads to the center of one / a pyramidal.

Tanean with a long row of houses is a closed area; it means that area is the area of women. Outer men are not allowed to go in when there are no men in *Tanean*. Women would welcome guests when there are no men in *Tanean*. So *Tanean* is an autonomous region for a family that can only be entered if there are men in it. This autonomy is mirrored in the attitude of everyday life, one family at *Tanean*. This means that there is no other element that can regulate their lives if it is not themselves. This can be understood because their death and lives depend on themselves and the natural environment. Female houses are reflected in the ownership and the nature of the house itself is a woman. Men are outsiders; men have tasks of external affairs.

Unlike *Tongkonan*, although the same background cosmology, due to geography and natural conditions, they result in a different mirror. Three principles in the fields of society are reflected in the pattern of its spatial arrangement. The room is divided into three and leads north-south¹³. It meets the main aspects, which the north is the central place as the home of the gods, a sacred place, the elderly and women. North is imaged with the highest elevation compared with the middle and south. Meanwhile, the southern region is an area for boys. The middle is neutral unifier area, kitchen. This area has the lowest position. Expression image shows a very clear hierarchy of the north-south high and low middle. Image of the west-east orientation is also imaged in the direction of the sleeping spirits heading west. It is interpreted as the meaning that the east is the beginning of life and west is death. The corpse in the family that has not taken into

ceremony is also placed facing west. That is to travel towards the ancestors. Structure and materials which are used dominantly are large timber with a large size; it also provides an image that these regions are areas very rich and fertile with construction material. Similarly, the roof of bamboo, and also the pole barn is an expression of local wealth area. Number of buffer/ column is not just a wood structure but they are also functioned to put more emphasis on the number of descendants of building owners. It is because *Tongkonan* is not just a space to live but a family space that was built along the same by the whole family. While carve-shaped variety is also imaged the number of horizontal lines that build the family fortune. Because constructing a *Tongkonan* is very expensive, it is not possible to build it alone. Ornament such as buffalo horn that hung in front of *Tongkonan*, with a very large quantity also image who owned it. The more buffalo horns mounted, then the economic and social statuses of its owner are clearer to see. It is because buffalo is a symbol of wealth and a spiritual symbol society. In particular ritual ceremonies buffalo's death is placed in very important position. And some buffalos have a special status, particularly *Balian*¹⁴ buffalo that is castrated. These Buffalos serve as a medium between the real worlds with the spirit world, they are used to deliver the spirit to underworld.

Understanding the use of *tanean* and *tongkonan*

Implementation of aspects in order to *Tanean*

¹³ Imre, Jowa, Nooy, Hetty, BANUA TORAJA, changing patterns in architecture and symbolism among the Sa'dan Toraja Sulawesi Indonesia, royal tropical Institute the Netherlands, Netherland, 1988

¹⁴ Balambang, Luther, ADA' TORAYA, Ranterpao, 2007: 73

can be seen from how nature adapted to their needs. The use of woven bamboo wall allows air circulation can run well. Although the building has no windows, but the wind and the light still come in well and also in the day room is still bright. It is because the sun can still penetrate the wall well. Another side effect of using a transparent wall, named gedek¹⁵, is adaptation of the humidity inside the room to be controlled. High humidity can be overcome by flowing air into the room. In terms of construction and materials, Madura, dry conditions and infertility do not provide a material with large dimensions. It can be seen from the building structure that is used. Dimensional timber with a small size and dimensions ranging from 10x10 CM that only one room with only 2.3 m column spacing, allowing the materials and construction used to be mild. In addition to the dimensions of a very small space since it consists of one room and porches allow this building to not require a complex construction and the materials used are also very minimal. This fulfills the image of Madura are located in areas barren, dry and infertile. The materials used are also very limited, locally available materials such as bamboo and wood are very dominant. Bamboo and wood are a lot of potential environment in Madura. *Reng* and *usuk* are arranged through small parts which are small bamboo without any ceiling. This has the advantage of air circulation and light can enter the room.

The position of the sun, wind direction, the placement and nature around it are a part of life observed in this paper. Placement of the living space and can not be separated from the cosmology of the society. The position of the north, south, east and west give the aspects of use and image that not only fulfill the

importance of use and image in visual. More than that, that aspect of order and the image are more emphasized to their spiritual needs. Why directions of buildings are always facing a certain direction? It is because it is in accordance with this aspect of the image of its users. It is because the philosophy of the direction the wind is the determinant in accordance with the desired state. In this climate and geography, it can also be applied in accordance with the cosmology of their society. Cardinal directions, the geographical position of the mountain and the sea become the determinant factor for forming the image in accordance with the image of the society.

Aspect of use of the Tongkonan is expressed by the cardinal orientation. The building faces north toward the south, it meets the wind direction, this state is strengthened by the sun. The size of the building that extends to the possibility of sun and air circulation can run well. Structures and walls of wood gives possibilities air circulation and sunlight work well. The existences of openings are structured to provide the possibility of rotation of air and wind better. A vertical opening in the building is capable of controlling the air circulation without disturbing occupants for all the time. While opening the front side of the building is a form of air control as determined by the human actively. The stage house structure also gives one the pleasure and convenience of users in terms of humidity and temperature controls are pretty cool.

The use of bamboo roof that is composed of bamboo paired with a half-way provide security for owners as well as good temperature control, because as thermal insulation in the daytime and too cold at night. While building a solid structure with umpak at

¹⁵ Gedeks is wall made from bamboo woven.

the bottom obviously had in order to prevent weathering due to the wet climate. Knockdown structure without nails is to meet the demands of high seismic regions. This means that the peg system is to be flexible when buildings are facing shocks.

Interior space that puts the kitchen at the center of the space in order to also provide aspects of preservation, because the effects of the smoke kitchen gives poorer preservation of wood and bamboo materials are used. Insects can not stand to live and nest in wood and bamboo in it.

Conclusion

Aspects of the Use and Image are owned by a single ethnic group in Indonesia is one example of local wisdom in treating the nature and the environment in accordance with the context and the text when the buildings are located. Ability to adapt to the environment once seen as the local knowledge is very high, that not all developed by the next generation. Such wisdom has not been able to answer the challenge that's happening right now.

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