

# Community's Wisdom in the Process of Building Houses According to the Nature of Slope of Mountain

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**Abstract** — Communities in Indonesia have a lot of local wisdom in various forms, according to the nature of each culture. One of the community's specific cultures is the people's attitude in building their homes which is adapted to the natural conditions of their domicile. One of them is in slope of mountain. The presentation at this time is a submission of the research results on the strategy of the community in Reco village, Kapencar and Candiyasan in the process of building their houses. The research on the social aspects of architecture and applicable local norms was carried through the method of data collection, mapping, and in-depth interview using deductive qualitative analysis.

The research findings were that people in the villages of Reco, Kapencar and Candiyasan with their palace-based culture have established an acculturation of building system, between the character of building system and the Palace's Javanese philosophy, but with the choice of materials and building systems to address the nature of slope of mountain. Their adjustments of the house building system are in the form of: (1) architectural acculturation, (2) the selection of local materials, (3) even by taking the material from the ground to be built, (4) *sambatan* system and *mayu omah* process. It can happen because the people of the three villages have their norms held hereditary in the form of customs that encompasses all aspects of life. Although their customs are not in the form of a written rule but still adhered by all the people of the villages as the living law in the society characterized by magical religious and communal which continues until recently.

**Keywords**— local wisdom, building of house method, the slope of mountain settlement, living law

## I. INTRODUCTION

INDONESIA is one country which is rich in a variety of cultures and established customs and become part of community, particularly traditional community. Similarly, the natural setting in Indonesia will also affect the diversity of local wisdom. This local culture includes the culture of residing and building houses according to the conditions of nature supported by local wisdom norms of the community. People who live on the slopes of Mount Sindoro in the Villages of Reco, Kapencar and Candiyasan in Central Java Indonesia, have some local wisdoms in their various aspects of life. In accordance with field of research conducted by the writers of Soegijapranata Catholic University, this discussion

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is focused on the research findings on the system to build houses on the slope of mountain, from the social aspects of architecture and local norms that become the community's wisdom.

The uniqueness found in the three villages investigated in the form of house building patterns that resembles the pattern of buildings with palace culture whereas the location is on the slopes of Mount Sindoro (far from the royal palaces of Yogyakarta and Solo). At the time further exploration, the next uniqueness was found, such as the community's characters having some local norms in dealing with natural potentials in line with the knowledge of origin, which possibly form new knowledge as the integration of prior knowledge adapted to the natural conditions of the environment.

In recent years, the researchers have conducted a research related to the setting of villages affected by local trust with oral norms which last continuously.

Based on the basic knowledge, the researchers conducted further studies regarding public attitudes in building houses related to natural potencies and local cultures. This article concerns about the wisdom of the communities in the process of building houses in accordance with the natural potentials of the slope of mountain. The purpose of this study presented at this time was to explore the local wisdom by the community of slope of mountain in their adaptation to nature. With local wisdom, it is not expected to have environmental destruction in the building process.

## II. LITERATURE REVIEW

### A. The Concept of *empan papan* as Local Wisdom

The concepts of local wisdom in Java are in various forms, one of which is the concept of *empan papan* [1] and [2]. This concept is the concept of Javanese community who always adjust their life to the surrounding natural conditions. According to the researchers' view, the concept of *empan papan* is applied in the process of living in an area. Basically, local wisdom does not only have the characteristics to survive, to accommodate and integrate external cultures but also capable of controlling and giving the direction of cultural development in line with indigenous cultures [3]. As one of local wisdoms, the concept of *empan papan* architecturally has the aforementioned characters. The form of *empan papan* in architecture is able to develop itself in accordance with the indigenous culture, to adjust to the natural conditions occupied, to address the development of technology as long as it is in line with the natural conditions of the local

environment, and to optimize the the natural potential for the harmonization of building process. In the future, the development of architectural local wisdom can be sustained by [4] the elements determining the community's natural setting with spiritual and their local wisdom along with the development of science and technology.

#### *B. The Concept of the Natural Potency of Slope of Mountain for Building Materials*

In general, it can be stated that the meaning of a house can be revealed from the shape, environmental / spatial pattern and the building's spatial and structure [5]. From the statement above, it shows that houses, including the houses on slope of mountain will have wisdom meaning for their settlement environment when the houses and building structures are in harmony with the natural potential of the environment.

The natural potentials of slope of mountain have a lot of natural potentials such as mountain stones, bamboo, and sand wood. Some building materials using local materials (such as natural stone) are caused by the adjustment to local climate. The selection of materials will be different between lower and higher sites [6]. Regarding the abundant potentials of the nature in slope of mountain for building materials, one former of local wisdom can be derived from existing materials in the building sites directly. This shows that the potential of slope of mountain location demands specific local wisdom in the process and construction of buildings, including houses.

#### *6C. the Concept of Mutual Caring and Sharing*

The concept of mutual sharing is one of the concepts of Javanese local wisdom. Mutual sharing of *tepo sliro* and mutual understanding are to others and care for the environment [7]. It can be formed because in general, people in Java have a principle of wisdom: *memayu hayuning bawana* (embellishing the beauty of the earth) in order that all can live in *gemah ripah loh jinawi* (living properly and prosperous). The concept of mutual sharing/ caring is formed by a sense of equal fate and burden (*senasib sepenanggungan*) and by a sense of becoming the closest relatives residing in one area with collective life system [8]. It can be formed because basically residential areas are always formed by the physical elements of nature and their communities with their social and cultures which are revealed in the physical elements including their houses that always take place holistically, comprehensively and totally [9].

#### *D. The Concept of Legal System and Social and Cultural Values*

Law is for humans and not vice versa, and law does not exist for itself, but for something more extensive, namely ... for human dignity, happiness, prosperity, and the glory of man [10]. Such law is the living law in society as local norms established on the basis of local community's agreements and obeyed for generations and adhered to the common interest of the community. Soekarno Soerjono stated that legal norms collected in a legal system is essentially a concretization of socio-cultural values embodied and formed from culture, then law would have been found by a community how simple the community is. Similarly, Cicero argued that "*ubi societas ibi ius*, where there are people there is a law" [11]. The

community in Indonesia, mostly living in traditional rural areas, lives based on the nature of traditional thinking with cosmic nature, that is, to maintain a balance between physical and invisible world.[B]. F.D Holeman stated 4 (four) general natures of customary law as a whole: the natures of the religious-magical, communal, constant, and concrete (visual), whereas Supomo argued that the traditional atmosphere of living together of village (community) has the patterns of religious, social, and communal [B].

The protections to the existence of traditional society, including the local norms, are included in Indonesian Constitution, namely the Amendment of the 1945 Constitution in Article 18B paragraph (2), Article 28I paragraph (3) and Article 32.

#### *E. The Concept of Local Wisdom*

The concept of local wisdom, which is in some writings also often called traditional wisdom, is all kinds of knowledge, belief, understanding or insight as well as custom or ethics that guide human's behavior in ecological community life [12]. Traditional wisdom teaches that it does not belong to individual but belongs to a community, containing traditional knowledge, and good life with the whole nature [12]. There are various sources of local wisdom, derived from customs and teachings of various religions; many traditional wisdoms are contained in ancient documents or texts. For example, in Java, they were developed by the Sultans and Sunans, ancient manuscripts, and literatures [13]. Therefore, it is necessary to explore the ancient texts in Java, Sulawesi and Sumatra. These environmental contributions require two things, i.e. norms and their applications [13].

The concept of local wisdom has been included in Law No. 32 of 2009 on Environmental Protection and Management. Article 1 point (30) of Law No. 32 of 2009 defines local wisdom as "noble values that apply in the order of community's lives to protect and manage the environment in a sustainable manner".

### III. RESEARCH METHODOLOGY

The research was conducted by the method of qualitative deduction. The research stages were taken from qualitative data collection, qualitative analysis based on empirical data and the legal norms, to the conclusion on community's local wisdom in the process of building houses.

#### *A. Data Collection*

The process of data collection was conducted in several ways, such as:

##### *A.1 Mapping of Physical Data*

The mapping of physical data was conducted to get the information and to make the categorization of house character. From this data, it was obtained selected houses as the cases having specific characters that can be observed in more detailed.

##### *A.2. In-Depth Interview.*

Collecting data through in-depth interview was conducted after finding the selected cases. Interview was conducted to

house owners and some public pictures having the knowledge on community's wisdom, and local rules in the process of building houses. The data obtained from the in-depth interview became the information or the major data of the research conducted.

### A.3 Secondary Data.

In addition to primary data, collecting secondary data might be needed in the study of law or local norms. It was considered since some rules had been written in regulations, such as the regulations of the government in the present and the norms of the community and *petung* or Javanese *primbon*.

### B. Data Analysis

The data analysis was conducted using the methods of qualitative and normative/ law analysis.

#### B.1 Qualitative Analysis

The qualitative analysis was conducted in the field directly along with the data collection. The first method conducted was the methods of categorization and coding of grandtour results to obtain the appropriate cases. The subsequent analysis was conducted in qualitative based on data interviews and physical data. The analysis stages were performed simultaneously during the process of collecting data and after the completion of data collection.

#### B.2 Law Analysis

This research on legal aspect is a process to find the rule of law, principles of law and legal doctrines in order to answer the legal issues faced [14]. This is consistent with the "prescriptive" character of science of law, which relates to what is supposed to be not so. Similarly, the target or object of legal research is basically a norm or principle (*das sollen*) and supported by behavior or facts (*das Sein*), so it was not only normative research conducted but also supported by empirical research [14]. The analysis of this legal research used legal theories, the principles of law, and related laws.

## IV. RESEARCH RESULTS

The research results obtained include several things, such as spatial arrangement of houses, the selection of building materials, *sambatan* systems in building houses and local norms related to sustainability.

### A. Architectural Acculturation of Palace Community's Initial Culture Adapted to the Nature of Slope of Mountain.

Ancestral history of people living in the three villages on the slope of this mountain came from the *Kraton* (palace). They were *abdi dalem* (employees) of the Kingdom, the followers of Prince Diponegoro who fled after losing Diponegoro war. As society in the palace environment, these ancestors had basic knowledge about building houses like the understanding on Javanese building theories in general. It can be seen from the *pendopo* (pavilion) with 4 *soko guru* (4 main pillars) to existing spatial, especially in the buildings of the village officials.

Architectural acculturation occurred after the ancestors came, settled and developed on the slopes of Mount Sindoro with the main livelihood as farmers [15]. In the process of

development, there have been adjustments between the buildings with palace distinctive characters adjusted to the needs of farmers' activities on slope of mountain. Given the need for wide post-harvest space, the presence of upper chambers (ceiling) is often used as an extra room as a place to store the harvest and equipment. In addition to the room over the kitchen which is used to preserve maize [15], the building of additional space also occurs in pavilion space [16] which originally has the meaning as a reception room with the character as public space (picture 3).



Picture 3: Architectural acculturation: *Pendopo* (Pavillion) space with *soko guru* (main pillars) added by *pogo* space for the adjustment to farmers' activities

Source: Rejeki and Indrayati collection , 2014

The architectural acculturation shows that the wisdom concept of *empan papan* had been performed by the ancestors so that they could settle and developed on the slope of the mountain. Then, it has been specific settlements until today. This uniqueness may also occur in some other locations in Central Java, or in Indonesia in general, as long as the people living in a particular region have a commitment to perform the agreement executed by all community members.

The house arrangements of the community in the three villages reflect that humans are part of the universe which are also illustrated in the laying of doors and windows of the houses which do not face directly towards the sun because it will cause overheating and generate heat in the atmosphere of family life. In family life, a house should be "*tentrem* (peaceful) and *adem* (cool)" and not hot because the heat will result in poor effect on those who inhabit the house. In addition, when facing east, the wind coming into the house is also unhealthy because it is too big. Therefore, in building houses and addressing natural resources, the community has had a custom which is a reflection of local wisdom values to live at one with nature and to understand nature as a part of human life as included in Javanese philosophy.

The research locations in the three villages are prone to cyclones as they are in northern coast path flanked by mountains on the north and east. To prevent the occurrence of disasters that harm society, the ritual "*selamatan*" is performed with the offerings of *kambing kendhit* (black goat with white circular on its stomach). The community in the three villages who have always held the "*selamatan*" with the offerings reflects the recognition of supernatural as part of the community. It shows the characteristics of traditional society that still uphold magical values in life. Even, this magical value is closely related to the communal nature of traditional society which is the characteristic of brotherhood among members of society, including the utilization and dealing with surrounding environment. The cultural values are still adhered to the local community as a local norm that is still valid today as the noble values of local society.

### B. The Selection System and Local Material Sources in Accordance with the natural potential of slope of mountain

The prominent local materials in the villages of Reco, Kapencar and Candiyanan are mountain rock and sand. This happens because each village is flanked by a quite big river flow which flows directly from the top of the mountain to the villages' sides. The river which is also the inter-village border is the path to distribute the mountain materials to the villages on the slope of the mountain. The potential of rock and sand is likely to be taken by the residents to build their homes. Reco villagers tend to take stones and sand manually from the river beside the village. The more prevalent wisdom was found in Kapencar village, and a part of Candiyanan village. In the process of building homes, the communities of Kapencar village whose lands contain sand and rock tend to pick up rocks and sand in their own lands that will be built. They are also used to flatten the site, so the surface of home floor is flat. In addition, by using the materials from the places of origin, home buildings have no additional burden on the environment. The building processes undertaken by the communities were (1) to explore and take rocks and sand, to the extent that the surface will be built, or to estimate that the material needs have been fulfilled. (2) The next step is to build houses using stones and sand obtained [16]. When the stones and sand are insufficient, they attempt to take stones and sand from the river or buy other building materials (Picture 4)



Picture 4: Architectural Wisdom in the form of the Building Method using the materials of stones and sand taken from the lands that will be built.

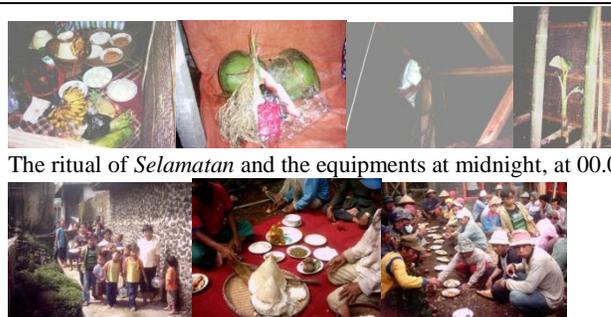
For the people of the three villages, the natural resources provided in the surrounding of the community are gifts of God that must be maintained in order to remain sustainable for the sake of human survival. The communities in the three villages are not different from Javanese community in general who view humans as part of the universe. Land is the source of livelihood other than water because land is a source of livelihood for farming or fulfilling food needs of the community and to meet the needs of *papan* (house). The communities uphold the norms in building houses by exploiting existing resources around the land that will be used to build houses. Rock and soil/ sand excavated at the sites that will be used to build houses are used as the materials for building houses. Thus, there is no material disposed in the house building process. This norm reflects the spirituality value of the people who see these resources as the gifts from God that should be used for the communities but should not be discarded/ wasted. Every action must have the result; this value is held by the people of the three villages. It is actualized in the form of expression *sapa gawe nganggo, sapa salah bakal saleh, sapa nandur ngundhuh, becik ketitik ala ketara* (Those who do will reap the consequences, Those who are

guilty will be found the guilt, and those who plant will definitely harvest the crop, those who do well will be recognized, as well as those who do mistakes) [17].

Whenever there are people who would build a house, they had to start by a ritual to beg the protection of God in order that the building would be smooth and blessed. Moreover, there are no houses and yards with fences because, for the local community, land has a social function, not only private property. Thus, the norms that guide these communities are religious-magical in nature and highly communal. The norm reflects the local wisdom in keeping the quality of soil for the survival of surrounding society.

### C. The System of Sambatan in the Process of Mayu Omah.

The concepts of mutual sharing and cooperation become one of the local wisdoms which are quite prominent in the process of building houses on the slope of the mountain, at the research location in specific. The most unique and interesting concept of mutual sharing in the house building process is in the construction phase of *mayu omah* (installing roofs). From the field observations fully and in-depth interview, it can be found that the true/ ideal process of *mayu omah* in these three villages should be done within 1 day. To achieve the target, the construction process at this stage is done in a way to have more workers who help, by means of *sambatan*. *Sambatan* is a stage in asking for help from neighbors and relatives without pay, and by only serving with enough food in certain rituals (picture 1).

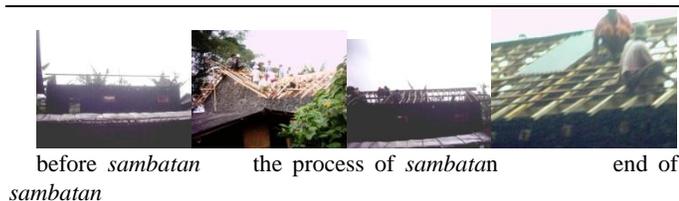


The ritual of *Selamatan* and the equipments at midnight, at 00.00

The togetherness situation of having meal together at the time of *sambatan*

Picture 1: the situation of *Sambatan* procession, one of local wisdoms in the process of building a house  
Source: Rejeki Collection, 2010

In order that *mayu omah* can be done in one day and based on the results of *petung* (the calculation of Javanese Horoscope), the procession of *mayu omah* is often started at midnight. In one case observed in Kapencar Village, *Sambatan* procession started at 0:00 AM and the *selamatan* (salvation) was held in a location where the roof of a house would be installed, followed by the execution of building the house. In this event, the entire closest residents and relatives would come and assist or accompany the work. In accordance with the calculations, the execution of the work could be completed in one day (picture 2)



Picture 2: *Mayu omah* was done in one day by means of *Sambatan*.

Source: Rejeki Collection, 2010

Land has social function and does not only belong to individual, so when each community member builds a house, the neighbors helped by collaboration to build the house. Prior to the building of the house, the communities of the three villages always organize *sesaji* (offerings) as part of *selamatan* that the house building will run smoothly. The ritual of *selamatan* reflects the recognition to divine nature as part of the universe in which man lives. Thus, there is a relationship between man and the universe and the presence of communal character as the identity of traditional society. This value is always reflected in the norm of building houses in the three villages.

From these findings, it shows that the community's social relationship in the form of *sambatan* becomes one kind of local wisdoms to share in the process of building a house for communities on slope of mountain. With the mutual sharing and care one another, it will give a sense of light and easier to build a house and live on slope of mountain.

#### V. CONCLUSION

From the study results above, several conclusions were obtained: (1) community's wisdom in house building process is related to the elements of nature and social in which people realize that they are part of nature and a community. With this awareness, a community has performed (2) the process of building in accordance with the natural conditions, in this case, the contoured natural conditions containing very much potential of building materials. The specifics on the three villages are that the materials are directly used in place so that the environmental burden is not increased.

In addition, (2) it is to maintain social relationship to their community. In the process of building houses, all members of society are involved. The unique thing is the community's wisdom is a "deal" of timing, e.g. *mayu omah*, for the involvement of the entire community although not written. Therefore, every process of building a house, at that stage, will involve directly the entire members of neighboring communities in it. (3) The presence of local norms adhered by the people of the three villages reflect the values of local wisdom which is a reflection of the values of the local traditional culture. Although it is a common norm to have held the customary law character of Indonesia in general, but the implementation is performed in accordance with the specifications of settlement characters on the slope of mountain with full of spiritual value to the mountain. (4) The presence of the principles of local wisdom that can thrive in harmony and influence the development of technology. In the three villages, the technology in harmony with the natural

resources is applied as a gift of God and the shared assets that must be maintained and utilized for the welfare of the people.

In general, it can be concluded that the local wisdom implemented jointly by the people in the settlement of slope of mountain is always associated with the natural potential of the slope of mountain that must be maintained in its natural potential.

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