Cakruk as Local Wisdom and Reflection of Ancient Javanese Architecture in Indonesian

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Abstract
The existence of pos ronda (guard post substation) which scattered throughout the country is considered a form of cultural distinctiveness in Indonesia. On the island of Java, besides being the nation's cultural characteristics, pos ronda is also unique because its floor structure is build like a stage (panggung) which stands among the domination of buildings with the ground floor. Looking back to the time of ancient Javanese, the building floor structure on the island of Java had a past under it (kolong). The term “gardu” was absorbed from French term garde, and oddly enough that there is also local terms (Java) “cakruk”. Recently, pos ronda shifts its function from its function as facility for security guarding into a public space to relax, chat, play and so on. By referring to the structure of the floor which has space under it, local terms, and the further shift of its function, we have the basis in designing cakruk. The embodiment is implemented in Randu, Temon Village, District of Simo, Boyolali, Central Java Province, Indonesia.

Keywords: ronda, stage, local terms, ancient, design.

1. Introduction.
The threat from the outside or from within human beings encourage people to create a variety of security devices. The form of external threats to the security and human convinience starting from natural disasters, weather or climate, wild animals, and so forth. The threat of human beings is a threat by among humans either in the form of disputes, conflicts, wars and so on. Throughout human civilization, man has tried to create a set of security both massive and systemic, personal and social in nature. Systemic security pattern, among them are the use of a PIN (personal identification number), password, key word, and the key number, fingerprints, registration number, ticketing, CCTV (closed circuit television), and so on. Physical security pattern ranges from beteng architectural building, checkpoints, portals, fences, doors, window bars, drawer, to a key.

In Indonesia or Java in particular, patterns of communal security which is interesting to be studied is the presence of patrolling (ronda). The activity of ronda has even been institutionalized throughout the corners of the country both in the cities and villages to the smallest governmental structure that is RT level (neighborhood unit). Means or facilities to accommodate these activities are commonly named a guard post substation (gardu pos ronda). Based on its function, guard post substation can be categorized as industrial and communal. Industrial guard post substations generally has commercial functions to serve the interests of a particular business. The characteristics of duty officer is a person with certain professions or skills, ranging from unit security officers, the police, even to the military. Time sharing system, financing, technology, regulation until the sanction is quite firm. The conditions is found in offices, shopping centers, hotels, factories, housing, as well as in other institutions.

A communal guard substation is a social security guarding facility amid settlements or villages. Devices systems and activities includes: (a) the duty officer performed by resident in turns; (b) the person in charge of security village called jogo boyo for traditional community or guards civil defense or (HANSIP) for modern society; (c) a traditional communication systems through sound mark by hitting a tool called kentongan; (d) the fund raising of village cash is through jimpitan; (e) operational time is at night and the duty officer is a man.

The development of information and communication technology and the increasing of the welfare of citizens that is charactarized by the stability of environmental security, encourages a shift in the function of pos ronda on the community. The substation (gardu pos ronda) as a security guard facilities of environment is now likely to shift into a public space for various activities and even across time, cross-gender and cross-age. Guarding activities in the evening which was originally for security guard is now likely to shift for activities of hanging out, chatting casually among people who are not structured, not even limited to evenings only. People in it now are not only men but also children, mothers with their own activities, playing, taking care of children, taking a rest, until the place to sell.

In harmony with the shift of gardu pos ronda function, it is interesting to be studied for the fact that the communal guard post which is located in the middle of the residential area has some terms or different
names. Therefore, this study is to reveal the sense of the local term of the gardu pos ronda. Secondly, the structure of the guard post substation (pos ronda) floor is different from those of the buildings in general, therefore, this study also tries to find out how this unique structure of floor (kolong) is linked to the local Javanese architecture. Thirdly, how do the design and the embodiment of the guard post substation which has public function maintain the structure under the form of local uniqueness. Various things become important to be studied because the guard post station in the discourse of design gets less attention than the other product or other architectural buildings.

2. Literature Review.

(Abidin Kusno: 2007) writes about the substation with an emphasis on political aspects, but in the discussion Kusno also touched on aspects of history and its architecture. Historical aspects are discussed more on political aspects, although it is not systematic he also discusses substations since the Dutch colonial period, the Japanese colonial, the period of independence movement, post-independence, the old order, the new order, until the time of reformation. A substation (gardu pos ronda) is a means of guarding the environment and as a marker of a territory in a region. Kusno also mentioned that the existence of the gardu pos ronda building (in the structure like pendhapa) has its origin in the colonial period of H.W. Deandels.

Guard Post substation is a part of the environment security system, (Turan: 1996) describes the guidelines for how to do patrolling in the security system of (siskamling). The Environment as part of the security system even also partnered with the Police of the Republic of Indonesia (Polri) as the institution that is responsible for the security of the state. Related to Pos Kamling the police published field guidelines on how to develop Poskamling (Pos Keamanan Keliling). The instructions concern tasks, functions, activities or activity, personnel, equipment, capability, type of Poskamling, even to the working arrangement among Poskamling.

The existence of a few local terms and the French term absorbed for the word gardu, leads to the further tracing of the sense of the local term uses Javanese hyposemantics. According to (Sudaryanto; 2014) Javanese hyposemantics is a word that is actually related to each other but not grammatical. The term mean has at the same time the resemblance and closeness of meaning.

The existence of a building which has floor structure like a stage (panggung) in Java, especially gardu, is becoming synchronous with some literature that states that the building architecture in Java in ancient times was build like a stage (panggung) and has a space under it (kolong) (Wiriyomartono, 1995), (Frick; 2003). This is also confirmed by the presence of some relief images of panggung houses on several temples in Java.

Concerning with efforts to build up and restore the function of the substation based on the cultural roots of society, (Dharsono; 2007) states that in the traditional Javanese society's belief, every attitude, behavior and action are full with philosophical meaning. The concept of the three realms (Tri loka/Tri Buana) contains three realms, top, middle and bottom and the application of architecture building as at the Meru (mountain) shaped roof. Further, the elaboration associates this with the theory (Josep Pryoyotomo; 1995), that the shape of the mountains is the reflection of traditional Javanese roof which are divided into four level in society. This basis is then used as the basic idea in the design of cakruk in this study.


This study is a qualitative study using historical and philosophical approach as the basis of the design of guard post substation (gardu pos ronda) or more precisely is cakruk. The location of research carried out in the region ex recidency Surakarta (Sukoharjo, Sragen, Wonogiri, Karanganyar, Klaten and Boyolali), with the consideration that the Surakarta is geographically located in the center of the island of Java as a representation of Javanese culture. The study population is the entire substation guard post, the total number of units of the population, this research will use cluster sampling method, the sampling is based on the group or a particular group (Eriyanto, 2007). The group mentioned is a communal guard post substations (gardu pos ronda) which its floor structure is like a stage (panggung). The data source is from several informants related to the theme, studying document, while data collecting techniques is by interview, recording and documenting data. The Limitation of the discussion is the guard post substations (gardu pos ronda) that are communal and located in the middle of residential areas.

The strategy of this research implementation is to formulate the concept through the analysis of the results of observations, field data, literature and interviews. Further, results of analysis are used as a basis for planning and designing guard post/cakruk through some alternative sketches. The embodiments of the design with the community are embodied in hamlet of Randu, RT 11 RW 02, Temon Village, District of Simo, Boyolali, Central Java as one of the villages in the region of former residency of Surakarta.

4. Analysis and Discussion.

The study of originality, uniqueness, local wisdom of a nation can be obtained via its past cultural community or from its community which still adheres to its tradition. In the midst of traditional or rural communities are still
found many traditional ceremonies, rituals, language, and other behaviours which still adhere to traditions hereditarily. “Ronda” with all its facilities which is called gardu pos ronda, is considered to be one of the unique culture of Indonesia that are hereditary. Guard post substation (gardu pos ronda) are found in different parts of the villages and in the town, spread in various regions in Indonesia. In the recent development there are many buildings or terms that use a combination of the word gardu (substations), posts (pos) and patrolling (ronda), among them are the security post, police stations, guard posts, posko, View post, substations, electrical substations, command post, postal services, post office, and so forth. The guard post substation (gardu pos ronda) which is interesting to be studied is the substation that is located in the middle of residential area, and even such kind of substation is considered as a form of cultural uniqueness or local genius of Indonesia.

Throughout the history of Indonesian civilization, a substation has experienced twists and turns of the different role and functions. In the days before colonization the substation is still sporadic and is not a network to systematize the idea of attachment or the boundary of an area. The emergence of the guard post institution as a border in the village or town is the impact of the proclaiming of the territorial limits as a government strategy of Daendels in the the Dutch colonial period. It is institutionalizing the idea of borders into sharply demarcated spaces. The substation as a building architecture then can not be separated from the representation of power, security, territory, until an identity (Kusno, 2007).

The impact of delimitation of territory in the era of Daendels, the subsequent history, during the Japanese occupation, the substation increasingly confirmed its existence as territorial control as well as control of the Indonesian independence movement. The existence of gardu pos ronda is increasingly institutionalized, its existence even to the bottom layer in a structure of government that is the smallest tonari gumi, a term for RT or RW in the Japanese occupation period (Susanto; 2009). Later periods, during Suharto’s new order era (ORBA), substation guard post (gardu pos ronda) was used to form the overall defense through activities (environmental safety system) or Poskamling with the aim of watching the movements of the parties that are considered to threaten the power or government stability (Barker; 1998). The next sequence in the early days of reform, there are many post (posko) through out the whole parts of the the that is identical with a particular party as a form of political freedom and democracy.

In many region of Java, the substation (gardu pos ronda) is also called, poskamling, cakruk, angkruk, or cakruk. The term “gardu” (substation) is absorbed from French term which means the guard house, while angkruk, cakruk or cangkruk is a Javanese local term. According to Indonesian language dictionary; the substation is defined as the guard house (rumah jaga); small house on the roadside (Mangunsuwito: 2002).

4.1. Guard Post Substation (Gardu Pos Ronda).

Guard post substation generally constitutes architectural building measuring between 2 to 3 square meters located alongside a road or in other strategical places. Other architectural buildings that are physically and size similar to gardu pos ronda is a gazebo and a hut. The fundamental difference between the gazebo and a hut compared to communal guard post substation is on function and its location. Gazebo is an architectural building which is personal, has a recreational function and is generally located in the park, while the hut is a means of protecting farmers against the heat and rain which is located in the middle of rice fields.

The term ‘gardu’ (sub station) is more commonly used and even has become a standard term. Guard post substation or poskamling is generally associated with territory, power, peace-keeping and synonymous with the world of men, and there are devices and systems surrounding it (Kusno; 2007), (Astrosemito; 1995). Activities conducted in the guard post includes guarding, patrolling around, gave warning of public disturbances, give information, provide support services, limited engineering for public safety, and report public disturbances that occurred to the police (Astrosemitro; 1995).

In the recent developments guard post substation (gardu pos ronda) has experienced shift of function. Several activities devices and systems in the guard post substation are not running in a comprehensive manner as the original. The condition of guard post substation is now far from being frightening as a security system and devices, and more likely to shift to a public space function with operational time in the day or at night.

Various activities inside the guard post substation is now likely functioned as mothers carrying and playing for children, a chat, for a while resting, sleeping, selling, hanging out either in the afternoon or at night. The shift in the function of the guard post sub station from defense and security functions into a more social environment, makes the local term cakruk be more appropriate than the term guard post substation (gardu pos ronda). It refers to the historical background as discussed at the beginning of the analysis and the notion of cakruk itself. Two paradigmatic streams of the existence guard post station should stand as a function of the substation as in the period before colonization and the existence of local terms cakruk, angkruk, cangkruk.

4.2. Cakruk.

To reveal the term cakruk it is important to use Javanese hiposemantics. Hyposemantic is a word that is actually related to each other but are not included in the formal grammar (Sudaryanto, 2014). However, the Javanese grammar has done it, by the existence of tembung wot. Tembung wot is a series of several letters but not as parts...
of the word of a word, and has a particular meaning (Slamet Z.M.; 2014). For example, a series of letters L-U-R, in words grooves (allar), lines (jalur), tendrils (sulur), lur-luran, and others which have a meaning related to the length. This is called the sense of connection or proximity between each other. This is also found in the word mangkruk, mangkruk, angkruk, cakruk, cangkruk and angkrik, mangkrik, cakrik where the word has meaning or relates to height. The truth of this can be seen in the Javanese language dictionary where angkrik or mangkrik means ngadeg [lungguh] ono sing ing papan duwur which means standing or sitting on a high place (Mangunsuwito, 2008). -an suffix on the word angkrikan declare a facility to mangkrik (sitting up high).

Angkrikan in the Javanese language is the term used to mention public sitting facilities located outside the room (out door) is more precisely located in the roadside. Angkrikan is public sitting facilities which is found alongside a road so that anyone can sit down. Angkrikan size is wide enough so as to allow to sit several people at once. Generally the material used is in the form of bamboo or wood. The use of the term and the existence angkrikan in various villages are still commonly found.

Traditional sitting facilities similar to the angkrikan are lincak. The fundamental difference between the lincak and angkrikan is the function, that is non-public and the placement is in space (in door). Another difference is that angkrikan generally larger than the lincak. Here below is the documentation of lincak, angkrikan and cakruk:

![Documentation](image1.png)

Figure 1: Some of the tools of traditional sit Java community, in the form of lincak, angkrikan, and cakruk. (Documentation: Sumarno, 2014).

The proximity of the words and closeness of the meaning of the word angkrikan and angkruk / cakruk / cangkruk then also has a proximity of function, form and materials used. The similarities are they are equally public seats, the average size of 2 to 3 square meters, the materials used are bamboo or wood, and the floor structure which has hollow under it so as to allow people to sit with legs hanging down or by foot above the sitting facility (hanging or perched). The things that distinguishes the lincak, angkrikan and cakruk / angkruk, is that angkrikan and lincak are sitting facilities without a roof, while cakruk is sitting facilities are equipped with a roof.

The emergence of a name or the term in Javanese culture is not something that appears suddenly, but will always be interlinked with a specific purpose or goal, including in this case the naming of any facility, including cakrik/angkrik. This agrees with the Javanese expression, asmo kinaryo jopo (a name is a representation of the intent and purpose). Cakruk is one of public furniture that has a seat function or the like, public in nature and is located outside the room with a roof and a floor that has hollow under it as the characteristics. The term 'cakruk' which is the local term deserves to be popularized as a form of local wisdom that refers to the placement, the shape of the floor structure and function of the building as the distinguishing factors with gardu (substations).

Traditional architecture buildings in Indonesia which are generally dominated by the floor building structure
which has space under it, stretching from Sumatra, Kalimantan, Sulawesi, to the island of Lombok. We can also find these conditions, in the Gadang houses in Padang, Panjang houses in Kalimantan, Tongkonan from Sulawesi, Lumbung for Sasak leg in Lombok etc. Only in some areas where the traditional architecture structure fuses with the ground floor or the yard, one of which is in Java.

Referring to a collection of old stories of an event organized by the nomadic-nomads China, basically, formerly traditional house built in Java has the floor structure which has a space under it (kolong), either established on land or at sea (Frick; 2003). Architecture building which has a space under its floor in Java remind us of settlement in the past which were built with the floor in the form of a stage with wood construction, as in the reliefs on the walls of the Borobudur temple (Wirjomartono; 1995).

According to Atmadi, quoted by (Nugroho; 2009) that a change in the architecture building in Java with the structure floor which has a space under it, occurred in the ancient Javanese Majapahit. He further explained that the residential buildings in the Majapahit era divided into three groups, namely: (a) the architecture of ancient Javanese; (b) the architecture of Majapahit classical; (c) the architecture of the last Majapahit. In the ancient Javanese Majapahit architecture that is characterized by the use of wooden construction that stands on the ground and has a hollow under it.

Loss of uses of the structure in Java was accompanied by the emergence of a house on the ground or on the yard. Since the Majapahit era, the use of plants elements (wood and bamboo as wall and frame, nipah and ijuk for roofing) has been begin slowly abandoned, since the advent of wall houses made of bricks and tiles (Lombard; 2008). The change of kolong structure to the structure fused with the ground, is inseparable from the development of the material or materials for constructing residential building. Sopandi stated that the loss of the kolong floor structure in Java and in Bali can not be separated from the cultural influence of Chinese and Indian (Supandi, 2013). The change of rock material into baked clay or bricks, pottery, and ceramics seem to affect the shift from the stage floor of the building into the floor fused with the ground.

On the island of Java is now nearly the entire building architecture is fused with the ground. Amid the domination of the building with a unique ground floor, is still found types of buildings with panggung floor structure. The remaining building, are the mosque, huts and cakruk. Referring to some literature or theory, that artifacts such as relief of the temple, and chronicles that Javanese building architecture in the past is constructed with a floor structure named kolong, in the present context is not excessive if cakruk is considered to be the reflect of ancient Javanese architecture.

4.4. Design and Embodiment of Cakruk.

The building can be used as an icon of a nation because the first impression captured by the senses as the work of a nation is the architectural building. Architecture building encompasses the building in the macro and microeconomic scale, traditional and modern style. The style of a design basically can be identified by several characteristics surrounded it the 'meru" shape of the roof. Meru is a term that refers to mount Semeru or Mahameru. (Rapoport; 1969), states that the creation of the shape of a building due to factors primary factors and modifying factors or secondary. Primary factors include social and cultural factors, while modifying factors covers climatic factors, material factors or material, construction factors, technological factors and factors of land.

The existence of mountain for Javanese culture, even for the Austronesian culture has a philosophical meaning that constitutes a sacred legitimacy in mythology (Munandar; 2014). The concept of Tri-Loka Buana (three universe) puts the mountain as a liaison means between the earth and the sky between man and the creator. Derivative concept of a mountain in Javanese culture are some of the terminology that is starting from kayon, mountains, meru, mahameru, the tree of life, kalpataru, banyan tree and the tree of life (Dharsono and Sunarmi, 2010). On a mountain or kayon in leather puppets there are are also depictions of human life consists of fire, wind, earth and water.

Frame line in the cone-shaped mountain (gunungan) in the shadow puppet has philosophical meaning as the dimension of human life. Applications of mountains on traditional Javanese architecture can be observed on the roof of the building of traditional Javanese house. The roof shape is getting increasingly taper upward, meaning that the higher the status of a building, the more sacred the status of a building. (Josef Prayotomo, 1995) divides the building into four levels; the highest level is 'dana' form of the roof is tajug / for mosque / place of worship; kitri for joglo building; sri for ‘limasan building’ a pyramid; the lowester is gana for building houses in the village.

Buildings for worship in Java, be it traditional mosques, churches, vihara, pura or pagoda, the roof form can be distinguished from the other buildings, that is in the form of high-rise roof, sharp and pointed (tajuk). Second strata (kitri) are buildings for nobles or princes which is characterized by the size which is very large with a roof peak shape is severed or joglo. The next stratum (sri), are buildings for the community for the middle class that are buildings in smaller size than joglo with a pyramid-shaped roof limasan. The latter are buildings for the public which are called kampung which are characterized by the smallest size compared to
other buildings with a roof in a prism shape. The illustrations of mountains and forms of the roof of traditional houses as mentioned above are as follows:

![Diagram showing different types of roof forms in traditional Javanese architecture.]

Figure 2: Application mountains on the roof of a traditional building in Java.
 history. (Sumarno: Interpretation anniversary of Josef Priyotomo, 2014)

That is the norms that are used by Javanese community to categorize or stratify a building. However, now many buildings are no longer used these norms, there are many buildings that serve profane but has *tajug* shaped roof. Such cases occur even in the guard pos substation or *cakruk* that uses *joglo* shaped roof which is identical to the retainer or royalty. This condition makes the meaning of the shape of *Meru* somer-saulting and silting. The use of *joglo* roof for substation for the roof established alongside the road has begun in the colonial period of Daendels for the purposes of building the Groote Postweg (Kusno, 2006). In the recent developments there are a lot of *joglo* roofed gardu pos ronda or *cakruk* that adorn the street corners in cities and in villages. Therefore, it is important to restore the shape and the philosophical meaning as a form of local wisdom to raise the nation's cultural identity.

That should become the basis of the design of *cakruk* to raise the local wisdom of Javanese culture. Referring to the shape of the mountains, the bottom is a reflect of a public building, non-sacred and for general public. Here below is a schematic design of *cakruk*, with design ideas of the lower part of a mountain and the chosen sketch-design.
Viewed from the front, design of *cakruk* refers to the frame line of mountains of shadow puppets. The tilt of side wall on *cakruk* design sketches, besides referring to the frame line of *gunungan* also to create comfort in a sitting position. Viewed from the side *cakruk* design sketch referring to the lower part of mountains. At the top end of the roof (ridge) on the right and left side is the transformation of an eagle, while in the middle is the small form of mountains or *kayon* itself.

*Cakruk* design is made open because this building is open for anyone to stop or sit down, chat, relax, rest a little, or other activities, the floor design with a space under it, open wall is in tune with communal society where there are children playing, mothers raising children and parents who are relaxed and just chatting. This design of *cakruk* is done in the framework of community service activities with the own cost and the contribution from the local community (non governmental funding) of Desa Randu RT 11 / RW 02, Temon Village, in the District of Simo, Boyolali, Central Java, Indonesia.

All needs to embody *cakruk* are carried out voluntary in a mutual cooperation (*gotong royong*) in a form of *kerja bakti* activities. The financial needs for various types of material expenditure are from the contributions among citizens. The uniqueness of this activity is that the food for the people during the construction and timber needs are fulfilled or given voluntarily by some residents. Timber is given in various forms and sizes ranging from the form of beams, boards, rafters, even still in the form of a tree by citizens. All are done voluntary so craftsman and all the labors aren’t given fee in the process of *cakruk* embodiment. Here below is the embodiment *cakruk* design.
Figure 4: Embodiment *cakruk* design. (Documentation: Sumarno, 2014).

Referring to the picture above the atmosphere in or around *cakruk* is far from being rigid, austere, as a reflection of the characteristic of a security guarding post. There are absolutely no safeguards activities by the guards but instead there are children who are playing, mothers who are caring for children and other parents who are sitting in a relax atmosphere while chatting.

5. Conclusions.

Based on the variety of the above description, it can be concluded that the shift of substation functions as the guard house into a social and public space, therefore makes the use of local terms *cakruk*, *cangkruk*, *angkruk* more appropriate in accordance with the meaning, function and historical background. Second, the existence of the stage floor building of *cakruk*, in the midst of the domination of the buildings with the ground floor in Java, the building floor which has hollow under it (*kolong*), is the characteristic which reflects the architecture of ancient Javanese period. Thirdly, the roof design of *cakruk*, the shape norms of the roof, referring to the frame line of *gunungan* which is in accordance with its function is an effort to reinvigorate the local cultural wisdom amid the swift of the onslaught of the global culture. Fouth, referring to the function of *cakruk*, which are non sacred, public, open, relaxed and general in nature so *Kampung* roof shape is a roof form which is suitable for the Javanese traditional architecture building.

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