Ngibikan Village
Spirituality Design in Javanese Architecture

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ABSTRACT

In May 27, 2006, a massive earthquake hit and destroyed Ngibikan, a small village 17 kilometers south of Yogyakarta, Indonesia. Yet, in a few days, the villagers rose up and reconstructed not only their houses but also their daily life. In this case, architectural design includes not only building as a material practice but also a humane and spiritual one. This essay employs combined methods of contextual criticism (Attoe, 1978, pp. 103-104) and hermeneutics as modeled by Paul Ricouer (2006). The results of this research also indicate the importance of understanding that the act of emergency rebuilding is not only about physical form but also about the value of spirituality in rebuilding life.

Keywords: *reconstruction process, contextual criticism, hermeneutics, Ricouer method, spirituality design*

INTRODUCTION

At dawn, like any usual day in the small village called Ngibikan located 17 km. south of Yogyakarta, Indonesia, the villagers started their daily activities normally (Figure 1).

But on May 27, 2006, suddenly at 5:55 AM a massive earthquake that registered 5.9 on the Richter scale shook the harmony and humble patterns of life in this village. The villagers' houses, which were made from stone and wood construction, collapsed. On that day, five people died. The earthquake was centered at 110.32 latitude and -8.03 longitude at a depth of 11.3 km, 25 km to the south-southwest of Yogyakarta, or only 10 km from Ngibikan village.

The village was the site of huge destruction (Figure 2), but the Ngibikan villagers did not grieve for long. In a few days they stood up and already prepared to reconstruct their houses. The villagers' ability to cooperate quickly in a collaborative reconstruction method makes this after-disaster reconstruction a unique case study. For this reason, this reconstruction project was an Aga Khan Award nominee in 2010.

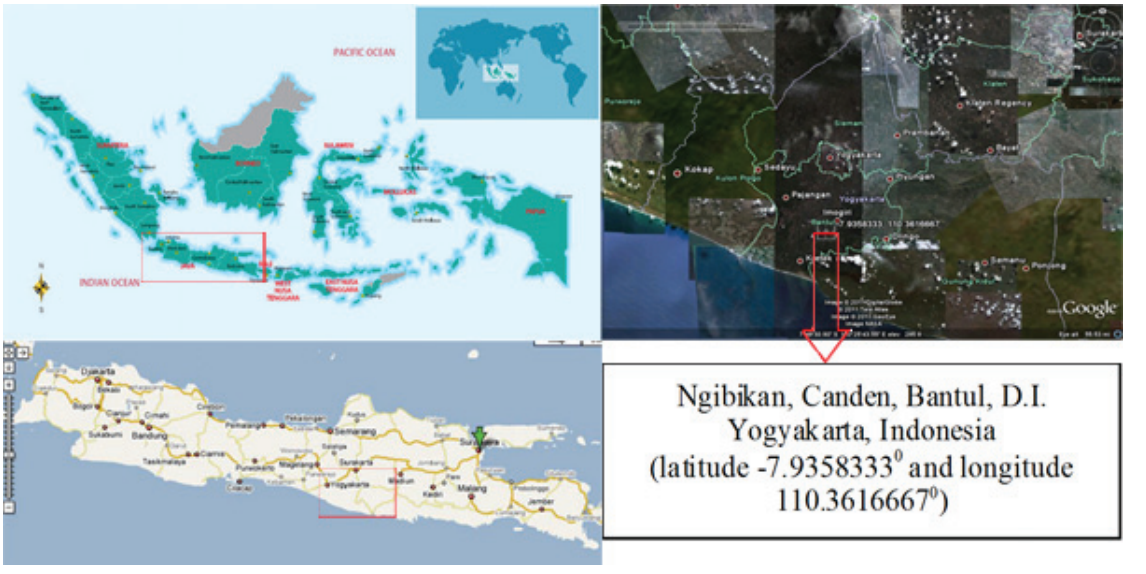

Figure 1:
Location of Ngibikan Village.

Figure 2:
Situation after the earthquake in Ngibikan Village. Source: Pangarsa, 2008, p. 40.

Ngibikan is small village located in a fertile agricultural region (Figure 3). Rice has traditionally been the main source of livelihood, but other crops such as soybeans, peanuts and corn are also grown in this area. Ngibikan is located in a large fertile plain with very little topography and was populated with *limasan* homes, a common feature of rural Yogyakarta. Before the earthquake, Ngibikan villagers made their houses from a wooden structural frame sitting on a cement floor and were in-filled with brick walls and covered with a clay tile roof. These brick walls went the full height without reinforcement, resulting in a great deal of damage and human injury.

These technical details are contained in two reports that were part of The Aga Khan Award nomination made by Brigitte Shim (Shim, 2010) and Eko Prawoto, (Prawoto, 2009). These two documents also describe in detail the Ngibikan reconstruction process.

If Shim and Prawoto already explain all the technical data and methodological processes, what is the special or original value of this paper? This paper purposes to show another aspect, not the technical one, but the role spirituality had in the architectural design and reconstruction process. J.H. McLeod

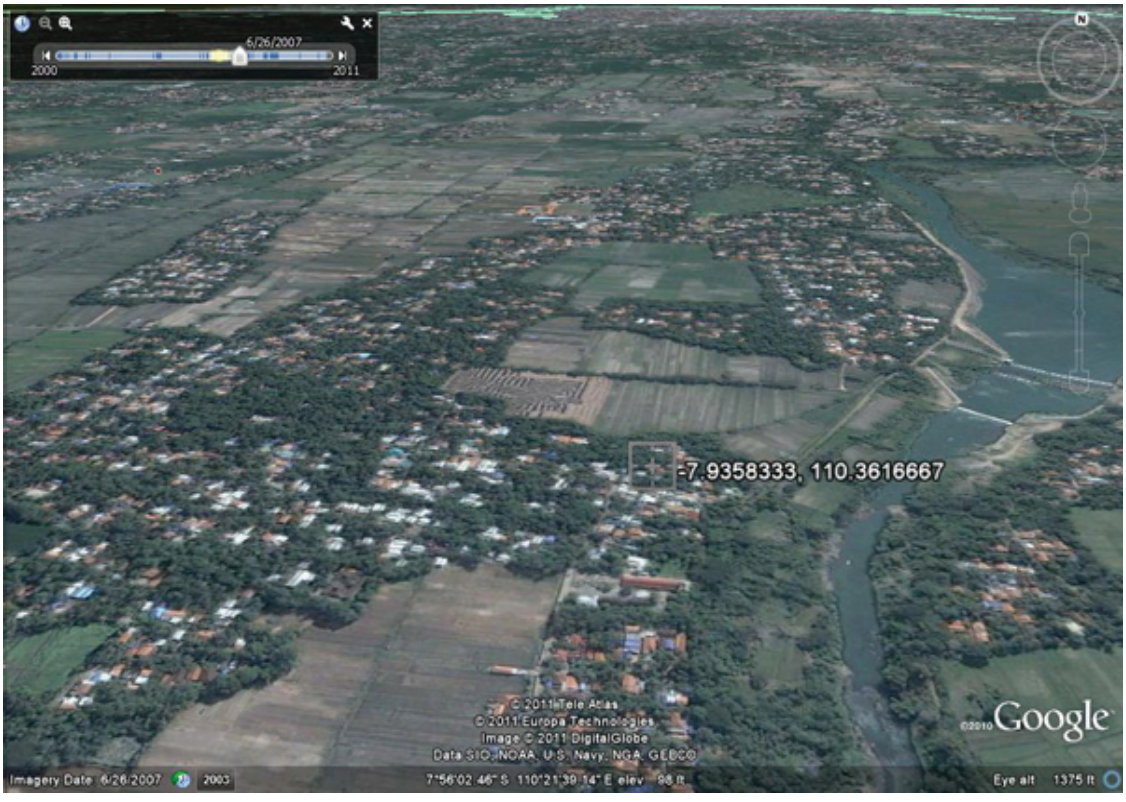

Figure 3:
Aeriel view of Ngibikan Village. Source: Google Earth.

has written that: "Architecture is ultimately about the people who experience it, and about bringing some element or dimension of beauty and spirituality to their lives" (McLeod, 1997, p. 83). In the Ngibikan village case the problems are:

- First: In what way does the spirituality of the villagers show up? This question is connected with the architectural element.
- Second: Is there any connection between the 'new' houses - the product of reconstruction, with the 'old' one? This question is connected with the architectural experience and the villagers' understanding of beauty.

METHOD

Two basic methods were employed to solve the questions above. The methods must help us understand the behavior or the stories told about the reconstruction, which show up as intangible aspects. That is why this paper employs two steps and both steps need specific methods. The first method is called 'contextual criticism'. This method can describe the construction process more clearly from a wider view. Attoe wrote that design information could be gained through exploring social, political and economic contexts. Those contexts are connected directly with the process of design. (Attoe, 1978, pp. 103-104). The 'contextual criticism' method can show not only technical aspects, but also another aspects such as spirituality in this case, which influences the reconstruction process.

The second method is Ricouer's version of hermeneutics. After accumulating descriptive data from the previous method, the next step is to interpret that data. For Ricouer, symbols have a double meaning. First, a symbol can be seen as the present thing itself and secondly must look for deeper interpretation in 'the absent of the presence'. This means that a symbol can and must be given

a new meaning and value outside the thing itself. (Poesporodjo, 1987, p. 159). Operationalizing Ricouer's version of hermeneutics has three interpretative steps: the first step is establish a symbol; the second is giving meaning to that symbol and deeper interpretation; and the last step is giving philosophical interpretation based on that symbol (Sumaryono, 1999, p.111). In this case, the descriptive data of the reconstruction is only the first step.

RECONSTRUCTION PROCESS

In the previous introduction, it has already been seen that the Ngibikan villagers didn't need a long time to stand up and prepare to reconstruct their houses. The chronology of these reconstruction processes can be seen in Table 1. The 'fast track' reconstruction process was of unique value and as a result, the reconstruction of Ngibikan was nominated for an Aga Khan Award in 2010.

Table 1 Chronology of the Reconstruction Process in Ngibikan Village.

No	Date	Activity
1	May 27, 2006	05.53.58 AM: A massive earthquake, registering 5.9-6.3 on the Richter scale
2	May 28, 2006	Eko Prawoto calls Maryono. Maryono tells Eko, that the earthquake has devastated his village. Eko Prawoto and his wife visit the village bringing emergency food and supplies. The villagers are camping in the rice fields in temporary constructions made of plastics sheets and bamboo.
3	May 29, 2006	Eko Prawoto and Maryono discuss possible strategies for reconstructing the village.
4	May 30, 2006	Maryono builds one prototype using a wood truss.
5	May 31, 2006	The Ngibikan villagers start clearing the ruins.
6	June 1, 2006	The Kompas newspaper called Eko Prawoto, the professional local architect known to them and asked him how they could help with post-earthquake reconstruction. Kompas is the most widely read newspaper in Indonesia. The Kompas newspaper receives donations from its readers to help victims of the earthquake in their region.
7	June 2, 2006	The design discussion by Eko Prawoto and Maryono.  *Figure 4:* *Eko Prawoto (right, black t-shirt) discuss with Maryono (middle, brown t-shirt)* *Source: Prawoto, 2010.*

8	June 3, 2006	Maryono calls a community meeting for 'Rukun Tetangga' (RT) no.5. 'Rukun Tetangga' is the smallest formal community in Indonesia. Maryono and the villagers agree to build a prototype of a single house with adjustments proposed by Eko Prawoto. One of villagers proposed to use a light roof material (non asbestos fiber cement), which replaces ordinary roof tile.  *Figure 5:* *The model of house* *Source Prawoto, 2010*
9	June 4, 2006	The Kompas newspaper agrees to give financial support to the reconstruction of a home in RT 05 in Ngibikan
10	June 5, 2006	The villagers agree to reconstruct their houses together using a 'mutual cooperation' method (in Bahasa called *gotong royong*; in local language called '*sambatan')*. The female villagers built a public kitchen to cook for everyone who is involved in the reconstruction project. They work form 8 AM until 10 PM, everyday without pay.
11	June 12, 2006	After constructing 3 wooden structural frames, villagers conducted the traditional ritual called *slametan* for gratitude and make a wish to God for the next construction process, and for their future life (Figure 4).  *Figure 6:* *Situation of Traditional Ceremony called 'Slametan'* *Source: capturing from (House, 2009)*
12	September 2006	Over the three months, the villagers worked together to rebuild the 65 homes. Total site area: 43, 255 square meters Ground floor area: 2,808 square meters Total combined floor area: 2,808 square meters Total cost of project: USD 54,698.00 Cost per square meter: USD 19.00 for construction

Sources: • *Prawoto, Architect's Record 2010 Award Cycle, 2009; Prawoto, 2010; Shim, 2010*

In this reconstruction process, the central figure was Maryono, a construction foreman and the chief of RT 05 in Ngibikan village. Maryono was also a contractor for Eko Prawoto in Prawoto's construction projects since 1995. Maryono never learned construction from formal education, he just learned by doing, from one project to another project (Pangarsa, 2008, pp. 48-52). Although Maryono is a chief of RT 05 in Ngibikan village, his 'power' to lead villagers does not come easily. The villagers did not easily accept and follow Maryono's ideas. He needed a process and time to lead the neighborhood. After a long process, the villagers understood that Maryono's ideas were for their own good. On the other side, Maryono's ideas did not mean and would not change anything if the villagers did not have the life force to face their future lives. After the earthquake, the villagers talked to each other that at that moment, they were equal, no one was rich nor poor anymore, they were all at the same level.[1] This produced an atmosphere of mutual cooperation between the leader and the villagers. But that wasn't enough, between each villager there needed to be the same understanding of mutual cooperation.

After all villagers reached a same understanding and purpose, the reconstruction could be begin with a 'fast track' method. Maryono divided the male villagers in to four working groups.

- The first group was called 'the foundation group'. This group had the duty to make reinforced concrete foundations; measure the house; dig and install foundation footings.

- The second group was the wood group. They had the duty to prepare the coconut wood and making the wood structural frame. Each house received four frame sets.

- The third group was the roof group. They had the duty to install non-asbestos fiber cement as a roof covering, and to install the zinc ridge.

- The fourth working group had the duty to make the walls at only a meter high, from brick. The upper part was constructed with wooden frames clad with fiber cement board.

The new houses used *limasan* structure. Before the earthquake, the sight of many *limasan* houses was a common feature of rural Yogyakarta. The word *limasan* refers to a vernacular hip roof with a peak on the top (Shim, 2010). In the reconstruction process, only 10 persons could be called professional builders, including Maryono and Eko Prawoto. Almost all the villagers in Ngibikan were unskilled in construction. The villagers of Ngibikan have various livelihoods: farmers, pedicab drivers, cash crop merchants (especially bananas), traditional cake traders and assistants to a carpenter or mason.

Figure 7:
The concrete foundation (left); preparation of the place of foundation (right). Source: Prawoto, 2010.

[1] Eko Prawoto in a personal email with researcher

Figure 8:
Preparing the coconut wood (left); the wood structural frame (right). Source: Prawoto, 2010.

Figure 9:
Installing the fiber cement roof (left); the finished roof cover (right). Source: Prawoto, 2010.

Figure 10:
Making a brick wall (left); wooden frame clad with fiber cement board (right). Source: Prawoto, 2010.

The reconstruction process used a 'simple contracting technique'. The professional builder led one of the working groups. He gave an example with the team in each group. Because of this, reconstruction used a simple contraction technique so that unskilled builders could learn fast (Pangarsa, 2008, p. 46). All the villagers built by hand not only their own houses but also their village (Figure 11). The new houses also used recycled material. The villagers collected building material from their old houses. They used bricks, windows, doors, etc. (Figure 12).

Although the Ngibikan reconstruction project method was 'fast track', villagers could express the uniqueness of their own house. Each house has a personal identity. It was not a mass production of houses, like in real estate, but each house was collectively crafted within uniform construction standards. Everyone could design personal characteristics for their own house.

Another result of the reconstruction process was that the number of houses in Ngibikan village increased. Maryono and Eko Prawoto wanted every single family to have their own house, even if only a very simple house of 6 x 7.2 meters. If before the earthquake, some houses contained multiple families, after the reconstruction process every single family had their own house, resulting in greater social equity (Figure 14).

Figure 11:
All villagers worked hand in hand to build their house.
Source: Pangarsa, 2008, p. 44.

Figure 12:
Even the elderly help to collect building material.
Source: Pangarsa, 2008, p. 44.

INTERPRETATION

The description above is the 'physical aspect' of the reconstruction process. Based on that description, the interpretation of the reconstruction of Ngibikan can begin. These interpretations want to know what happened behind the physical aspect. Heidegger's paper 'The Thing' was written on June 6, 1950 (Heidegger, 1971). Heidegger wrote that the jug's use consisted in its void; although the jug is a recognizable something in its physically, it is the void of the jug – the nothing at its core – that makes the thing useful (Sharr, 2007, p. 28).

The interpretation here consists of two aspects: (a) the building aspect, and (b) the human aspect. In the

Figure 13:
the result of the reconstruction process in Ngibikan village. Source: Pangarsa, 2008, p. 42.

Figure 14:
Block plan of Ngibikan Village, before the earthquake (left); after the earthquake (right). Source: Shim, 2010.

building aspect, it refers to the relationship between the new buildings in Ngibikan and traditional houses in Java. In the human aspect, it refers to two groups: first, the villagers and second the central people in the reconstruction project, Maryono and Eko Prawoto. Those aspects address not only historical descriptive aspects but also philosophical, even spiritual aspects of architecture in Java.

Building Aspect

Foundation

In the reconstruction of Ngibikan village, Eko Prawoto suggested to use the local foundation technique called *umpak* – the "spatial foundation." This model of foundation was already found

Figure 15:
Umpak in Majapahit era.
Source: http://oediku.wordpress.com/2010/03/28/majapahit-bukti-kejayaan-nusantara/

Figure 16:
Umpak in Cemeti Art House by Eko Prawoto.
Source: Pangarsa, 2008, p. 133.

in Majapahit, an ancient kingdom in East Java (1293-1500 AD) (Figure 15). *Kawruh Kalang* is a construction manuscript made by the Surakarta Kingdom for a cultural exhibition in the Netherlands. This manuscript used Javanese letters '*ha na ca ra ka*' and was hand written and later was called *kawruh kalang* (Prijotomo, 2006, pp. 59-60). The manuscript describes that for a palace, the *umpak* must be decorated with golden paint (called *prada)* and be carved. And for ordinary people, this *umpak* must use a simple form and must not be decorated.

Eko Prawoto already interpreted this foundation form in the *Cemeti Art House* project at 2002. In this project Prawoto combined the *umpak* foundation with iron and wood for a structural pole (see Figure 16). In Ngibikan, Eko Prowoto proposed the same type of *umpak,* made simpler than in *Cemeti Art House,* but in the same material, concrete and iron (see Figure 7 left picture).

Wall

The introduction of *Kawruh Kalang* told that a Javanese house should be made of wood. *Kawruh Kalang* says that in the Mamenang Kingdom, Adipati

Arya Santan was entrusted to conduct research. He suggested that structures made by stone – like ancient Hindu and Buddhists temples – must be changed to wood. This is because wood materials are lighter than stone, thus less dangerous. (Prijotomo, 2006, p. 303). This story is based on folklore, but the logical reason is that Java Island – and Indonesia – is a seismic area with a lot of active volcanoes, and as a consequence there is always the potential for earthquake disaster. Another manuscript called *Layang Balewarna,* written by Mas Sasra Sudrija, an elementary school teacher in the Colonial Era, suggests that walls be made with bamboo matting (in Java called *gedhek* or *kepang*) (Sudirja, 1919). These two manuscripts tell that houses in Java must be made from lighter material like wood or bamboo. In Ngibikan, this suggestion was implemented by another light, modern material called fiber cement board. The Ngibikan reconstruction project went back to local knowledge by using lighter material. Idham and Numan researched the modern change from wood material to stone material before the earthquake.[2]

Roof

Shim already reported that the model reconstruction house was the *limasan* house. This model was the most common residential building in this area. The average age of the *limasan* house was approximately 50 years old. Over 37,500 limasan houses were reduced to rubble, according to data obtained from the Persada Foundation. Only a small percentage was rebuilt resembling their original form. In Ngibikan, the villagers rebuilt *limasan* housing type, providing a link to their past and their heritage (Shim, 2010).

Human Aspect

The Ngibikan Villagers

How could the villagers of Ngibikan rebuild so quickly after the earthquake? The model of life for Javanese people can be seen in puppet shadow plays, in Java called *wayang.* In every single play, natural disasters always play a part in the story. That part is called *gara-gara.* In that part, the puppeteer - in Java called *dalang* - includes all natural disasters like earthquakes, floods, volcanic eruptions, etc (Sudarko, 1991, p. 65). After the *gara-gara* scene, there is depicted a serene and peaceful world. The new life begins with the presence of the clown-servant, called *punakawan.* The scene informed Javanese people that after disaster comes new life or new hope. This understanding was embedded in Ngibikan villagers. The disaster destroyed their physical buildings, but couldn't destroy their life spirit and their hopes. An earthquake just shows the existence of the power of Mother Nature.

Serat Dewaruci[3] is another source that also talks about this same understanding. This folk story told Javanese people that our lives are played according to the god's wishes. Human beings need effort to understand the god's wishes. If man already understand what was going to be with their life, it can be called 'the unity between man and God', the highest spiritual understanding and the intimate relationship between man and God (Empu Widayaka, 1929, cetakan ke V). Ngibikan villagers didn't see the earthquake as God's anger, but it was a consequence of life or the god's wishes.

How did the villagers of Ngibikan express this understanding? They expressed this understanding with the spiritual ritual called *slametan.* This ritual was done when the main structure of the house was erected. On the top of the main structure of the roof they hang some crop, like bananas, sugar cane, coconut and the national flag (Figure 17). Maryono explained: "*Slametan* must be implemented, no matter what the house looks like. It is about the peaceful feeling of the household, the psychological aspect" (House, 2009). This ritual was already explained in *Kawruh Kalang.* The villagers still maintained their spiritual tradition in the building process. But in Ngibikan this ritual became special because they did *slametan* after the disaster. It showed that the villagers still have a hope in God, and want the god's blessing to continue their life. It

[2] The results already publish in International Conference on Sustainable Built Environment 2010 at Islamic University of Indonesia. The title of that paper was 'Why The Javanese Houses Have Failed in the 2006 Earthquake'.

[3] Serat Dewaruci is a manuscript which tells about Bima – one of Pandawa's in Mahabharata stories – looking for the essence of life. This folklore allegedly was written during the late of Majapahit Empire (1500 AD).

Figure 17:
The offerings on the top of the main structure.
Source: (Prawoto, 2010).

is not only physical building of houses, but also the hope for the new life. After describing the Ngibikan villagers, I will write about the key people in this reconstruction project, Maryono and Eko Prawoto

MARYONO

Maryono works as an overseer in building construction projects. His father was a farmer. Maryono graduated from elementary school in the 1970s. He never learned about construction in formal school. He worked in construction projects from the lowest level, as a coolie. Right now, after 27 years of construction experience, Maryono has become an overseer, the 'master of construction' for Ngibikan villagers, and also a 'boss' because he organizes the distribution of construction jobs for some villagers who work as builders (Pangarsa, 2008, p. 41). Maryono had already worked with Eko Prawoto since 1995. He built many buildings based on Eko Prawoto's working drawings. Eko Prawoto's design has greatly affected Maryono's architectural understanding, especially about detailing in design. Maryono has learned to work based on drawings, and also to value Eko Prawoto's design intentions. From that, Maryono expressed his acquired skill and knowledge in his own house.

When the earthquake came, Maryono's house did not collapse. But when Maryono saw his neighborhood fall around him, he was sad. Maryono was, as the chief of the neighborhood 'pak RT' – must help. The next question is how did Maryono lead the villagers? It was not an easy way to mend the broken lives of the villagers. Before the earthquake, Maryono already built a good relationship with his neighborhood, although he did not originally come from this village. The village is of his wife's origin. The good relationship, which he built before the earthquake, helped Maryono to lead the villagers when the reconstruction process began. Initially the reconstruction project didn't run smoothly. The villagers fought with each other when the building material came. Maryono and other elders provided the understanding to be tolerant. Finally, the villagers came to accept Maryono explanations that a 'fast track' method could run smoothly (Pangarsa, 2008, p. 44). The story behind the 'fast track' method, giving evidence to all the steps, needs a long process. The reconstruction project of Ngibikan village cannot be seen only at the time of reconstruction, but must also be seen as a process long before the project began. And that process has not only a physical, but also an abstract aspect.

EKO PRAWOTO

The second 'key person' is Eko Prawoto. He is a professional architect and a lecturer at Duta Wacana Christian University, and Maryono is one of his builders. Eko Prawoto and his family paid attention to what was going on in Ngibikan after the earthquake. He did not only make designs for a prototypical new house, but also the budget for reconstruction, and even oversaw the project. But also for Eko Prawoto, this project was not only to rebuild new houses but also to build a new life (Pangarsa, 2008, p. 47).

His attention and passion about this reconstruction project is close to the thinking of his mentor, Mangunwijaya. When he studied at Gajah Mada University, one of Eko Prawoto's lecturers was Manguwijaya. In 1992, Mangunwijaya received the Aga Khan Award for Kali Cho-de project.[4] Kampung Kali Cho-de is a squatter-type village settlement, illegal but tolerated by the government, built literality on a refuse dump on the bank of the river Cho-de. In 1983, Mr. Y.B. Mangunwijaya, architect and social worker, with previous experience of 'Kampong Improvement', along with the village leader Mr. Wili Prasetya, succeeded through negotiation in establishing a permanent co-operative system, accepted and acknowledged by the government. Previous plans to demolish the settlement, consistent with a green river bank policy, were laid aside. The villagers provided volunteer, unskilled labor, the architect provided technical skills and fund management and the village leader was the political liaison.[5] Mangunwijaya, with Kampung Cho-de project, and Eko Prawoto – with Ngibikan reconstruction project, have the same spirit. They accompanied marginal people and helped them to solve the problem. This is the genuine spirit of architecture.

CONCLUSION

We can learn much from all the aspects of the Ngibikan reconstruction project, we can see that importance of traditional house construction even now in Java. The villagers of Ngibikan interpreted the 'old house form' to become a new form through their experience of rebuilding after a disaster. We can trace that as a physical form, but from another side, this project proved that local knowledge has validity and truth. As traditional knowledge stored in the folklore indicated, light materials and structure is the most appropriate for Java. This indicates that folklore contains important local knowledge, suitable to the specific conditions of the area.

In the abstract aspect, the villagers still maintain cultural rituals. These rituals prove that people in Java still have a good connection with Mother Nature through spirituality. In their understanding, Mother Nature is a representation of God. The earthquake didn't look like an 'enemy' but was a consequence of life. This is a spiritual understanding that helped in the rebuilding process.

If we examine the human relationships in this reconstruction project, we can see the good relationship the villagers maintained between one another. That relationship was built upon the tolerance between each other and the belief: we are all the same level and same situation on the earth. In architectural education, especially in this moment of great interest in humanitarian design and post-disaster reconstruction, this project also proves that the best way to educate in architecture is learning by doing. Maryono, since 1995, has followed Eko Prawoto's design, and he has absorbed its essence. Prawoto, in turn, learned the true spirit of architecture from his teacher Mangunwijaya.With the Ngibikan reconstruction project, we can see that building has many aspects, not only physical, but also cultural, human, educational and even spiritual. Architecture is not just about form but also about the value of life.

REFERENCES

Attoe, W. (1978). *Architecture and Critical Imagination.* New York: John Wiley & Sons.

Empu Widayaka. (1929, cetakan ke V). *Serat Dewa Ruci.* Kadhiri: Tan Khoen Swie.

Heidegger, M. (1971). *Poetry Language Thought.* New York: Harper & Row.

Hill, J. (2006). *Immaterial Architecture.* New York: Routledge.

[4] Http://www.akdn.org/architecture/project.asp?id=1117

[5] Http://www.akdn.org/architecture/pdf/1117_Ind.pdf

House, C. A. (Director). (2009). *Arsitektur: sebuah pencarian bersama* [Motion Picture].

McLeod, J. H. (1997). *Ten Thoughts on Architecture.* Blacksburg, Virginia: Thesis submitted to the faculty of Virginia Polytechnic Institute and State University.

Pangarsa, G. W. (2008). *Arsitektur untuk Kemanusian: Teropong Visual Culture atas Karya-Karya Eko Prawoto.* Surabaya: PT. Wastu Lanas Grafika.

Poesporodjo. (1987). *Interpretasi: beberapa catatan pendekatan filsafati.* Bandung: CV. Remadja Karya.

Prawoto, E. (2009, October 15). *Architect's Record 2010 Award Cycle.* Retrieved August 11, 2011, from Aga Khan Award for Architecture: http://archnet.org/library/sites/one-site.jsp?site_id=15725

Prawoto, E. (2010, December 20). *Ngibikan Bangkit.* Retrieved January 07, 2011, from Ruang 17: http://ruang17.wordpress.com/2010/12/20/ngibikan-bangkit/

Prijotomo, J. (2006). *(Re)-Konstruksi Arsitektur Jawa : Griya Jawa dalam Tradisi Tanpatulisan.* Surabaya: PT. Wastu Lanas Grafika.

Ricouer, P. (2006). *On Translation.* New York: Routledge.

Sharr, A. (2007). *Heidegger for Architects.* London and New York: Routledge.

Shim, B. (2010, May). *Reconstruction of Ngibikan Village.* Retrieved August 11, 2011, from www.landscape.cn/Special/Aga-Khan/images/r14.pdf

Sudarko, S. K. (1991). *Serat Pedhalangan Lampahan Dewa Ruci.* Surakarta: CV. Cendrawasih.

Sudirja, M. S. (1919). *Layang Balewarna.* Bale Pustaka.

Sumaryono. (1999). *Hermeneutik,* Sebuah Metode Filsafat. Yogyakarta: Kanisius.