Architectural heritage in post-disaster society: a tool for resilience in Banda Aceh after the 2004 tsunami disaster

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Abstract, This paper discusses the role of architectural heritage as a tool for resilience in a community after a surpassing disaster. It argues that architectural heritage is not merely a passive victim needing to be rescued; rather it is also an active agent in providing resilience for survivors. It is evidence in the ways it acts as a signifier of collective memories and place identities, and a place to seek refuge in emergency time and to decide central decision during the reconstruction process. This paper explores several theories related to architectural heritage in post-disaster context and juxtaposes them in a case study of Banda Aceh after the 2004 Tsunami Disaster. The paper is based on a six-month anthropological fieldwork in 2012 in Banda Aceh after the Tsunami Disaster. During the fieldwork, 166 respondents were interviewed to gain extensive insight into the ways architecture might play a role in post-disaster reconstruction.

1. Banda Aceh and its Disaster and Cultural Background
Banda Aceh is the capital city of Aceh province, which is located in the northern part of Sumatra. As one of most affected cities by the largest natural disasters in the 21st century, during the 2004 Indian Ocean Tsunami and earthquake, its population reduced from 239,146 people to 177,881 after the Tsunami, then rise again in 2011 reaching 228,562 [1]. During the disaster, In Aceh, the loss of human life was somewhere between 130,000 to 170,000 deaths, about 250,000 houses were destroyed [2], and over 500,000 people were made homeless and displaced [3].

Due to its position, the city is very prone to disaster especially earthquake, flooding, and in 2004 it was exposed to a tsunami which is predicted has happened for several times in the past [29]. Its position at the mouth of a river has resulted in a sequence of major and minor floods [see for example 30]. In the past several earthquakes have been recorded by the travelers such as Beaulieu visited Aceh around 1620-30 witnessed flooding and also the recurrence of earthquake three to four times a year; in which of the large earthquake occurred on 7 March 1621 that caused panic [30]. In addition to these two disasters, he also noted a large fire, which burnt approximately 260 houses, on 4 June 1621, just a couple months after the earthquake [30]. It is, however, hard to find written records and archaeological proof of the existence of ancient tsunamis. A recent geophysical research conducted by Aron J. Meltzner et al. [29], which documents the history of earthquakes and tsunamis in Aceh between 1390 and 1455. From the travelers’ notes, Acehnese has demonstrated resilience by the quick reconstruction after disasters using traditional techniques and materials.
In response to the 2004 Tsunami Disaster, in 2005, Indonesian government established the Aceh and Nias Reconstruction Board (BRR) to manage the aid and funding which is recognized as one of the largest humanitarian aid projects in history for a four-year period [4]. BRR dealt with huge not only infrastructure loss, but also human and psychological loss. The survivors suffered the loss of infrastructure that supported their life such as roads, bridges, electricity, and telecommunication, agricultural and fisheries sector, and others. The loss of the built environment, a familiar place to where they tie up their memories has left trauma. In addition to this, survivors lost their beloved people and experienced a huge trauma too as many of them were hospitalized for injuries and some lost their jobs, homes and other crucial elements of their livelihood. Therefore, no wonder then this disaster has attracted a great deal of attention from many countries and donors across the world. International emergency aid and donors, including some vital United Nation’s organizations, have been involved since the beginning of the recovery process.

The Tsunami Disaster has become a turning point for Acehnese to move away from thirty-year conflict to peaceful lives. Aceh has been under the violence since 1873 when the Dutch war occurred and thirty years of conflict between Aceh Free Movement (Gerakan Aceh Merdeka/GAM) and the Indonesian government. Therefore, the conflict memories and disaster memories have been mixed with the memories of the “glory” of the past Islamic kingdom, its central place in society and the role of Islamic Sharia. These socio-cultural aspects have contributed to the ways Acehnese survived surpassing disaster and uses architectural heritage in the process of reconstruction and resilience. Before discussing my case study, below I explore several problems of understanding of architectural heritage in post-disaster context.

2. Architectural Heritage: Its Problems in Post-disaster Context
As I have argued everywhere, at least two major problems, which lead to a lack of understanding of the role of architectural heritage in post-disaster context. The problems are arguably caused by two main factors. Firstly, The Eurocentric Authorised Heritage Discourse (AHD), a term coined by Smith [7], which emerged in in Europe around the 19th Century, has influenced the ways global heritage organizations understand heritage. The AHD reflects the heritage understanding of European elites and understands heritage as tangible. Most initial founders of modern heritage conservation were European elites such as Ruskin, Moris, and le-Duc who worked as architects and art critics. Inextricably, the architectural view has influenced the way heritage has been defined as tangible, monumental and aesthetic things and at the same time architectural heritage has been shaped and reshaped by this AHD discourse [5,7]. Therefore, architectural heritage has been strongly associated with aesthetic and monumental buildings whose values are strongly linked exclusively to their form [5]. Architectural forms: façade, plan, ornamentations, amongst other elements shape the meaning of architecture, like other artworks [8]. In fact, architecture has two important aspects: forms and uses or functions. The later has been overlooked in the discourse. The relationship between tangibility and intangibility (between architectural form and its function) has gained little attention [9,10], and this interrelationship requires in-depth exploration. In post-disaster reconstruction, the destruction of architectural heritage has been only mapped and understood as the destruction of physical destruction without emotional consequences.

Secondly, little attention has been given to cultural issues in post-disaster contexts, so that this creates gaps in the development literature and debate over the importance of cultural issues for peoples’ resilience [11]. This only to attract attention after a series of major disasters, including the 2004 tsunami and earthquake in Aceh, and those of 2011 in Japan, and Hurricane Katrina, in the US in 2005. The attention is shown by the discussion of cultural aspects of post-disaster reconstruction [see for example 11-14]. This means cultural issues, including heritage problems and reconstruction after a tremendous disaster is secondary. The cultural issues have been given in the later stages of reconstruction or if it is given; it is separated from emergency, technical and other more urgent issues such as health, infrastructure, and housing. The issues of food supply, shelter, and health, will, of course, be a priority in post-disaster conditions. The aid distribution, especially during emergency
stages, stands a better chance of being successfully distributed if the cultural context of its beneficiaries is understood and their cultural resilience also contributes to the ability of people to recover from such extreme situations [15]. Therefore, the role of culture should also be recognized as important in the early phases of recovery. For example, “cash for work”, a scheme launched during the early stage of post-disaster reconstruction in Aceh, has been criticised for changing community’s values on communal works like gotong-royong and disregarding the local tradition. In addition, there is separation between cultural practices, such as traditional ceremonies, artisanship, and other intangible cultural and building conservation. In fact, some cultural practices occur and take place in heritage buildings and to build heritage building requires artisanship and craftsmanship. This also means there is a tendency to separate tangible from intangible responses, which negatively impact on post-disaster society.

3. Architectural Heritage: Resilience and Reconstruction in Banda Aceh

The issue of resilience has become central in post-destruction contexts [16]. This can be observed in the increasing the discussion and expose of cultural resilience following disaster and war [14]. For example, in the case of Japanese cities under threats of continuous disaster, they show that traditional principles and building techniques have contributed to their resilient and this traditional knowledge has enabled them to recover from the disasters and, even, had private initiative reconstruction [17]. Another example is resilience developed outside the disaster-hit area. Read [19] shows the ways survivors develop their resilience outside the affected area and the ability to return to a destroyed site. In this sense, the resilience is evidence in the ways people show their ability to rebuild their lives while coping with memories of a painful past, the loss of beloved people, places, buildings, and other familiar environments [20-22]. In this regard, resilience is the ways people recover from extreme situations, aftershocks and back to a ‘new normal’, in which activities are retrieved, the city and its infrastructure are rebuilt, and social, cultural and economic life function again [14]. In literature of relation to resilience and architecture, two interrelated elements of resilience have emerged: rebuilding the city [14] and establishing public memory discourse [20] which is usually associated with the creation of physical public space for commemorations, such as memorials and monuments [14,20,23], and the discussion in public domain such as newspaper, magazines and the like; it is in a more abstract nature which Freud would named a “talking cure” [22].

To understand the ways architectural heritage play a role in providing resilience, I have interviewed 166 respondents at three iconic sites of Banda Aceh: the Masjid Baiturrahman, the Tsunami Museum, and Masjid Puingan (Teungku Dianjong), using architectural anthropology as a method and then analyzed the data using NVivo®. Architectural anthropology enables an ethnographic approach emphasizing in-depth engagement to fully understanding of a particular setting of the subject being researched, to have access to a wide audience of its human validity, yet its explanatory theory that can’t be applied to many settings like grounded theory [24]. The full immersion of the researcher in a particular context through a reliance on unstructured data is required and a focus on single case or small number of cases, and data analysis that emphasizes the meanings and functions of human actions [24]. I make no claim that the interviewees are representative of the society in Banda Aceh.

I asked several main questions such as: what is overall reasons for visiting the sites, what do you experience when visiting the sites, what do you remember when visiting the sites, what does the building mean to Banda Aceh, what is the building of importance for Banda Aceh before and after the tsunami, and finally in what ways does Banda Aceh remain the same or change after the tsunami, and to what extent these changes affect people attachment to places?

There are at least two ways Architectural heritage provide resilience to the survivors of the 2004 Tsunami Disaster in Banda Aceh. Firstly, architectural heritage, due to its iconic nature, has played important role in relocating survivors and aid workers in emergency situation. The iconic architectural heritage through its physical elements which have high visibility features and ubiquitous presence, spatially guides survivors. As an iconic landmark, it is popular [25], so that it is familiar to the observers. It becomes a familiar object that helps people orient themselves after the disaster and guide
visitors and embrace returning citizens on their first days in Banda Aceh. In addition, in describing changes and losing places after the disaster, people use the physical aspects of iconic architectural heritage as tools. Three things create the familiarity of the form of architectural heritage: its tangible monumental (massive) form \cite{25}, complex and unique form, and central location \cite{26}. At least, after the 2004 earthquake and Tsunami and the reconstruction that followed, heritage places got the highest recognition 91\%, from interviewees as places that were familiar and unchanged in the city \cite{27}. Here example from my interviews expressed the roles of architectural heritage as place marker.

The Masjid Baiturrahman is a place marker, especially for people outside Banda Aceh such as Jakarta. They refer the masjid as a place landmark to locate other places nearby. For example, when they asked about my house, whether or not her house next to the mosque. (Female_Baiturrahman 37_Bachelor_Housewife_Acehnese)

I still recognize Masjid Teungku Dianjong, although its wall has been changed from timber into bricks. The roof is still the same…. (Male_Baiturrahman 32_Highschool_Selfemployed_Acehnese)

Table 1: Summary of Data

| Item                        | Masjid Baiturrahman | Tsunami Museum | Masjid Peulanggahan | Outside Sites | Total Interview |
|-----------------------------|---------------------|----------------|---------------------|---------------|-----------------|
| Sex                         |                     |                |                     |               |                 |
| Male                        | 19                  | 22             | 7                   | 25            | 73              |
| Female                      | 50                  | 22             | 10                  | 11            | 93              |
| Total                       | 69                  | 44             | 17                  | 36            | 166             |
| Age                         |                     |                |                     |               |                 |
| <17                         |                     |                |                     |               |                 |
| 18-24                       | 22                  | 10             | 3                   | 25            | 60              |
| 25-34                       | 17                  | 14             | 9                   | 40            |                 |
| 35-44                       | 8                   | 11             | 8                   | 1             | 28              |
| 45-54                       | 12                  | 3              | 3                   | 18            |                 |
| 55-64                       | 8                   | 4              | 2                   | 1             | 15              |
| over 65                     | 2                   | 2              | 1                   | 5             |                 |
| Place of Residence          |                     |                |                     |               |                 |
| Banda Aceh                  | 51                  | 25             | 16                  | 30            | 122             |
| Within Aceh                 | 14                  | 8              | 2                   | 2             | 24              |
| Within Indonesia            | 4                   | 5              | 1                   | 2             | 12              |
| Outside Indonesia           | 6                   | 2              |                     |               | 8               |
| Duration in Banda Aceh      |                     |                |                     |               |                 |
| 1-7 days                    | 15                  | 17             | 1                   | 1             | 34              |
| 8 days-11 months            | 2                   | 2              |                     |               | 4               |
| 1 year - 8 years            | 15                  | 11             | 2                   | 18            | 46              |
| ≥8 years                    | 37                  | 16             | 14                  | 15            | 82              |

Secondly, architectural heritage has supported reconstruction process in the way it provides a place for seeking refuge and decision-making. Heritage has the potential for providing people with resources for resilience. As argued by Rico \cite{28}, heritage is one of the sources of resilience due to its ability to
preserve traditional knowledge, so that it is not a passive victim which is at risk and should be protected. Architectural heritage like survived mosques gained added value due to their survival rates during the tsunami, which also helped create resilience in the community as well. In addition, Daly and Rahmayati [16] argue that the familiarity created by heritage and social and cultural aspects of recovery are important for the reconstruction process. For them, survivors, the landscape has two roles: abstract places embodying their long-term processes of cultural understanding and material places to contain activities contributing to resilience. Therefore, changes in the built environment like mosques and meunasah have contributed to the loss of familiar places [16]. Religious buildings have served as shelter, meeting point, etc. in the face of calamity [18]. In Aceh, the mosque and meunasah1 have served as meeting place for discussing reconstruction process [16]. Along with the importance of architectural heritage, Samuels [17] argues that the non-physical environment like neighborhoods has provided tsunami survivors resilience too. Everyday activities have contributed to rebuilding processes along with physical reconstruction. In addition, the survival architectural heritage has served as places to seek refuge during the 2004 Tsunami and following earthquakes. Moreover, architectural heritage functioning as mosques has greater chance to be used as evacuation place [6]. Here some examples from my interview:

During the earthquake and tsunami in 2004 we firstly gathered at Pasar Aceh (Aceh Market) and then we moved to the Masjid Baiturrahman to find safer place. I got home I might die. The Masjid saved my life. A lot of people seek refuge in the Masjid.....
(Female_Baiturrahman 19_Highschool_Unemployed_Acehnese)

...this masjid is one of the survived masjids during the Tsunami and a lot of people seek refuge here. Even during another earthquake after the 2004, people also run to the Masjid to save their lifes. This means that the masjid is in their hearts and minds as an evacuation center.
(Female_Baiturrahman 18_Highschool_Universitystudent_Acehnese)

This Masjid (the Masjid Baiturrahman) is a comfortable place to pray. What I remember about Banda Aceh is about this masjid. This masjid is keuramat (sacred) because the water couldn't came inside the masjid; not like those luxurious houses were destroyed. This is the Allah (God) will.
(Female_Baiturrahman 34_Elementary_Housewife_Acehnese)

4. So What?: Implication and Further Research
The most important implication of this research is we should rethink the ways modern disaster response, and reconstruction treats architectural heritage during emergency and reconstruction process. Aid workers and donors should take into account architectural heritage as an active agent too, not merely passive victim. They should consider to empower the survived architectural heritage and give a proper treat during the emergency stage, so that local people or survivors have enough room to reconstruct their architectural heritage in the ways they traditionally do.

Therefore, the immediate action to restore the function of architectural heritage, especially those related to every day (communal) activities such as mosques, meunasah, and others. It is central for the Acehnese after the tsunami. At least, let people use the available place in the ways they traditionally do. The following reconstruction or restoration of the damaged architectural heritage is also should be undertaken in the ways people familiarly do. Since the ways experts in heritage studies define architectural heritage reconstruction after the tremendous disaster is potential for diminishing people resilience. For example, the notion to restore architectural heritage in authentic form, so that it might delay its reconstruction and it requires a lot of resources in contrast to what people want. People, especially in Banda Aceh, value the authenticity of uses or function; rather than material [27].

1 A communal place which is located in village level. It serves as a prayer and gathering place as well as a place for education and communal activities are conducted.
References

[1] Badan Pusat Statistik Aceh 2011 Jumlah Penduduk Provinsi Aceh Menurut Kabupaten/Kota 2000-2011 http://aceh.bps.go.id/?r=data/eprint&id=62 (Retrieved 24 December 2012)

[2] Kenny S 2010 Reconstruction through Participatory Practice? In Clarke M, Fanany I and Kenny S Post-Disaster Reconstruction: Lessons Learn from Aceh. (London: Earthscan, Ltd)

[3] Ananta A 2007 The Population and Conflict In Ananta A and Onn L P Aceh: A New Dawn (Singapore: Institute of Southeast Asian Studies)

[4] Badan Rekonstruksi dan Rehabilitasi Aceh dan Nias/ BRR 2009 Seri Buku BRR

[5] Orbasli A 2008 Architectural Conservation (UK, USA and Australia: Blackwell Publishing)

[6] McCaughey J W, Mundir I, Daly P, Mahdi S and Patt A 2017 trust and distrust of tsunami vertical evacuation buildings: Extending protection motivation theory to examine choices under social influence International Journal of Disaster Risk Reduction 24 462-473

[7] Smith L 2006 Uses of Heritage (New York: Routledge)

[8] Whyte W 2006 How Do Buildings Mean? Some Issues of Interpretation in the History of Architecture History and Theory 45 153-177

[9] Leathart J 1940 Style in architecture (London: Nelson)

[10] Ching F D K 2007 Architecture: Form, Space, and Order (New Jersey and Canada: John Wiley and Sons, Inc)

[11] Barakat S 2007 Post War Reconstruction and Recovery of Cultural Heritage : Critical Lessons from the last Fifteen Years in Cultural Heritage in Post War Recovery. In N. S. Price Cultural Heritage in Postwar Recovery 6 (Rome, taly: ICCROM Conservation Studies)

[12] Al-Nammari F M. and Lindell M K 2009 Earthquake Recovery of Historic Buildings: Exploring Cost and Time Needs. Disasters 33 457-481

[13] Lakoff A 2010 Disaster and the politics of intervention (Columbia University Press)

[14] Vale L J and Campanella T J 2005 The resilient city: how modern cities recover from disaster (New York: Oxford University Press)

[15] Ascherson N 2007 Cultural destruction by war, and its impact on group identities. In N. Stanley-Price Cultural Heritage in Postwar Recovery 6 (Rome, Italy: ICCROM Conservation Studies)

[16] Daly P and Rahmayati Y 2012 cultural heritage and community recovery in Post-Tsunami Aceh In From the Ground Up: Perspective on Post-Tsunami and Post-Conflict Aceh edited by Daly P, Feener R M and Reid A 57-78 (Singapore: ISEAS Publishing)

[17] Samuels A 2010 Remaking neighbourhoods in Banda Aceh: Post-tsunami reconstruction of everyday life In Clarke M, Fanany I and Kenny S Post-Disaster Reconstruction: Lessons Learn from Aceh (London: Earthscan, Ltd.)

[18] Sugimoto S and Sagayaraj A 2011 Social frame, religious networks, miracles: experiences from tsunami disaster management in south India (Kentucky, the United of America: The University Press of Kentucky)

[19] Read P 1996 Returning to Nothing: the Meaning of Lost Places (Cambridge: Cambridge University Press)

[20] Huyssen A 2003 Present Pasts: Urban Palimpsests and the Politics of Memory (Stanford, California: Stanford University Press)

[21] Geertsmena A 2011 Redefining Trauma Post 9/11: Freud's Talking Cure and Foer's Extremely Loud and Incredibly Close Aspeers 4

[22] Fredericks V 2011 Remembering Katyn: Mourning, Memory, and National Identity. Memory Connection 1 197-210

[23] Groat L and Wang D 2002 Architectural Research Methods (Canada: John Wiley and Sons, Inc)

[24] Sklair L 2011 Iconic Architecture and Urban, National, and Global Identities In D. E. Davis
and N. L. d. Duren Cities and Sovereignty: Identity Politics in Urban Spaces (India, USA: Indiana University Press)

[26] Appleyard D 1976 Planning a pluralist city: conflicting realities in Ciudad (Cambridge, Mass: MIT Press)

[27] Dewi C 2017 Rethinking architectural heritage conservation in post-disaster context International Journal of Heritage Studies 23 587-600

[28] Rico T 2014 The limits of a heritage at risk framework: The construction of Post-disaster cultural heritage in Banda Aceh, Indonesia Journal of Social Archaeology 14 157-176

[29] Meltzner A J, Sieh K, Chiang H W, Shen C C, Suwargadi B W, Natawidjaja D H and Galetzka J 2010 Coral evidence for earthquake recurrence and an A. D. 1390–1455 cluster at the south end of the 2004 Aceh–Andaman rupture Journal of Geophysical Research 115 1-46

[30] Lombard D 1991 Kerajaan Aceh: Jaman Sultan Iskandar Muda (1607-1636) (Jakarta: Balai Pustaka)