Peunayong Chinatown Banda Aceh Post-Earthquake and Tsunami as Cultural Heritage District

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ABSTRACT
This paper studied the Chinese ancient buildings degradation post-earthquake and tsunami and determined the direction of preservation as an effort to protect the cultural heritage of building and environment. The methodology consisted Crosstab Chi-Square Analysis using the concept of Good City Form. Results was used in term of preserving Peunayong as cultural heritage district of Aceh.

Key Words: earthquake and tsunami, the ancient building, preservation, Chinatown.

INTRODUCTION
Built environment as cultural heritage in urban context consists of areas, sites, groups of buildings, structures and ruins. Cultural heritage is the combination of spiritual, material, intellectual and emotional features that characterize a society or social group. Thus cultural identity and cultural heritage appear very much as public goods that deserve public support [1]. Tribute to the work of ancient architecture that need to be conserved, not only its buildings or ornament but also relationship between buildings with the life of the community itself [2]. Preservation -or in most cases conservation- is not merely for romantic purposes, but also to enrich the sources of the present and future development. Various aspects of townscape are form and urban structure, the vitality, identity of the city, the quality of urbanity, respect for values of local culture, including heritage buildings as an important part of sustainable development [3]. Various environmental tragedies and disasters forces people to be wise in using the environment as a space of their life.

Almost all cities in Indonesia has Chinatown district which functioned as a regional commercial center and settlement of ethnic Chinese [4]. Chinatown also known as "Chinezen Wijk" or "China Town", can be found not only in Java but also nearly every major coastal city in Southeast Asia [5]. Some Chinatowns have a long history, such as Chinatown in Peunayong region of Banda Aceh, which regrettably had suffered severe damage after earthquake and tsunami in 2004. Many old Chinatown buildings of Peunayong were damaged or even destroyed, while many among the owner of the building which the majority of Chinese ethnic were died. This damage diminished the distinctiveness of Peunayong Chinese architecture and its region identity. Reconstruction project, however, do not consider the historical and cultural aspects, hence tarnish the image that was previously attached to Peunayong.

Peunayong is part of the old city area of Banda Aceh which was designed as Chinezen Kamp known as Chinatown. This area was placed by the Dutch at the edge of town (north) which is the port for the export-import activities. Tionghoa community itself has been in Aceh since the 13th century, this has been written in the Saga of Samudra Pasai [6]. While identified as CBD area of Banda Aceh, Peunayong area is also well-known with its unique characteristics of Chinese community. This is shown from a series of Chinese

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architecture of the remaining buildings in the area \cite{7}. The buildings which become distinctive feature in “Pecinan” are those which have combination function as dwelling and commercial, later it is known as shop-house \cite{8}, which has a very long shape extended backwards. Commonly, in order to overcome the lack of air circulation and lighting, every building is equipped with an innercourt or “courtyard” \cite{9}

This problem requires a study to look deeper of the causes of built environment degradation post-earthquake and tsunami in Peunayong Regions-Banda Aceh. The scope of this study are physical and non physical characteristics of ancient buildings and the built environment after the earthquake and tsunami, the causes of decline in physical and non physical quality of built environment, and direction of the physical and non physical preservation of buildings and environments in the Peunayong Regions.

**MATERIALS AND METHODS**

The numbers of samples of old buildings in this research are 83 buildings. Determinations of the buildings are adjusted for sampling with the sampling criteria:

- Building at least 50 years of age or at least built in the period of the year 1957;
- Buildings have distinctive architectural style or Chinese, traditional, or colonial

**Analysis Method**

a. **Phase I: built environment analysis using the concept of Good City Form** \cite{10}

The Identification of image-forming district in this study based on the concept of Good City Form (Lynch, 1981). This theory has five-forming elements namely Vitality, Sense, Fit, Access and Control. Fifth qualitative elements converted into two meta-criteria, namely efficiency and justice.
b. **Phase II: measurement and causes of built environment degradation**

Weighting of damage to the physical parts of the building, measuring the decline in environmental quality by making before-after comparisons (before and after the earthquake and tsunami) using Good City Form-element and determining the cause of environmental degradation of buildings and post-earthquake and tsunami with statistical analysis Crosstab Chi-Square\(^1\)\(^1\).


c. **Phase III: the direction of built environment preservation**

Determination of conservation of ancient buildings is done by assessing the cultural significance of each sample of ancient buildings.

**RESULTS AND DISCUSSION**

A row of shophouses in the area of Chinese architectural style Peunayong mostly placed in Jalan A. Yani (See figure 5), Jalan WR. Supratman, and Jalan RA. Kartini. Another distinctive building in Chinatown area is the monasteries, which located at Jalan T. Panglima Polem, exactly in the middle row of shophouses.

**A. Physical and Non-Physical Characteristics of Built Environment**

Ancient building in Peunayong has a specific Chinese architecture style that can be seen from the roof forms, doors, windows, facade and its ornaments. However, post-earthquake and tsunami, these parts of buildings were damaged and even destroyed. The identification after reconstructions project shows that 10% of buildings suffered no physical alteration, 50% of buildings had \(\leq 3\) parts modification and 40% of buildings had > 3 parts physical changes. 44% of building owners stated that the physical changes were done due to change of ownership and their different preferences on architecture style.

Non-physical characteristics of buildings were reviewed based on building age, ownership status, maintenance costs and changing of function of the building. Those ancient buildings were built more than 115 years ago; this affects the strength of building construction. Post-disaster, there were many change of building ownership from private rights to lease rights, mostly because the owners of buildings died during the disaster while some of them choose to leave Banda Aceh. Ancient building maintenance costs ranging from Rp. 500,000 - Rp. 1,000,000/month, which make the owner reluctant to keep their ownerships. The function of ancient buildings generally has a double function i.e. residential as well as a place of business. After the earthquake and tsunami, 37% of building became single function (shopping strips).

![Figure 2. Peunayong Regions Ancient Buildings](image)

Built Environment characteristics were reviewed based on the physical element such as land use, building intensity, circulation and parking, pedestrian path, the elements of information and support activity.

Peunayong land use is dominated by commercial and services area. Determining Regions Peunayong as a CBD does not affect the downtown urban morphology, because the trading facilities in Banda Aceh are generally located on the main road corridor or certain blocks. In addition to high density, Peunayong is also
familiar for its narrow alleys. Peunayong is the famous Chinatown area with high density regions, dominated by BCR of 95-100%.

Parking system in the area Peunayong consists of parking on street and off street. Commercial facilities and services generally use the road (on street) as a parking lot, except for an office area and hotels which already have their own parking place (off street). One way circulation system, which is applied on the main roads in the Peunayong region, and construction of pedestrian paths help visitors enjoying the atmosphere and visibility of Chinatown old buildings.

Elements of the information contained in the Peunayong Region are public signage and billboards as private signage. There are several billboards that cover the facades of buildings that covered the facade view showing the shape and ornamentation typical of old buildings. Post-earthquake and tsunami, local government provoke the growth of supporting activity in the form of public space called REX Peunayong, which serve local food and snack. Although this facility is only active at night, this was intended to attract visitors to the area Peunayong.

C. Socio-Cultural Characteristics of Peunayong Community

Regions Peunayong as Banda Aceh city's Chinatown area was inhabited by members of the Tribe Tionghoa Khe, Tio Chiu, Kong Hu, Hokkien, and other sub-ethnic groups (Sutrisna, 2008). Post-earthquake and tsunami the character of the area as Chinatown area were faded, caused by many of these ethnic communities left the city of Banda Aceh. Besides the earthquake and tsunami, the exsxtance of Presidential Instruction
No. 14/1967 that prohibits all religious activities, beliefs, and customs of China conducted in public place, had made Peunayung chinese community do not really know their culture.

D. Identity and Image of Peunayong Regions

The Identification of image region-forming in this study based on the concept of Good City Form. The concept of Good City Form has five-forming elements namely Vitality, Sense, Fit, Access and Control. These Fifth qualitative elements is measured by two meta-criteria, namely efficiency and justice.

Vitality elements in Regions Peunayong is identified from the of commercials and servises usage that support the function of district according to community level of economic, and the existance of REX Peunayong as a supporting activities at night. Sense element can be identified from the traditions or customs of Chinese ethnic culture, and the present of the row of old building that gave a unique atmosphere of Peunayong. Fit element is recognized from the way in which the physical Peunayong Regions matches the way people want to move, act, and behave in the public or private area. In fact, the narrow scale of space does not confine the movement of people activities.

Access elements in the Regions Peunayong can be seen from the availability and disaster mitigation path, pedestrian lane to ensure the safety of a person while moving within the region and the availability of public transport. Element control means maintaining, organizing and supervising the activities of citizens in their neighborhood. Peunayong Communities and local government have had adopted Village Developmen Plan (Village Planning) Peunayong Village as an element of control.

Building Quality Measurement

Based on the results of weighting 17 buildings (21%) still intact, 60 buildings (72%) of the building with medium severely damaged and 6 buildings (7%) suffered major damage (See figure 6).

The Decline Causes of Buildings Quality

The cause of decreased quality of ancient buildings in the area Peunayong consists of the ownership status changes 69.4%, 60.6% higher maintenance costs, the function of a large building with the influence of 50.8% and the effect of age of the building with a large value of the impact of 46.6%.

Built environment quality assessment review based on the concept of Good City Form by comparing the environmental conditions at the time before and after the earthquake and tsunami events (Table 1)

Table 1. Valuation of Built Environment Quality in Regions Peunayong

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<th>No.</th>
<th>Dimensional Criteria</th>
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<td>5.</td>
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*: Declining environmental quality  
**: Stable environment quality  
**: Improved environmental quality
Causes of Built Environment Quality Degradation

The cause of decreased quality of ancient buildings in Peunayong consists of changing the ownership status of the large influence of 69.4%, the high cost of treatment with the large influence of 60.6%, the function of a large building with the influence of 50.8% and the effect of age of the building with a large value of impact 46.6%.

Causes of environmental degradation in the Regions Peunayong consists of conditions / situations with great political influence of 60%, large ethnic assimilation effect of 59.9%, the role and participation of communities with 54.9% and decrease the influence of economic activity with 45.9%.

Referral Ancient Building Preservation

Preservation direction of ancient buildings is obtained from the assessment using the criteria of cultural significant (aesthetic, plurality, scarcity, the role of history, the magnificence and strengthen the character of the area). Obtained results of an assessment, are as follows (See figure 7):

8 buildings classified as preservation. Preservation focuses on protecting and maintaining the authenticity of the building in accordance with the original condition / not makes changes, as well as preventing the damage.

69 buildings classified in conservation actions. Conservation focused on maintenance, protection and utilization of the function and the physical aspect of buildings in order to keep the existence of an ancient building. The replacement of the function with new/relevant activities is recommended.

6 ancient buildings classified in the act of rehabilitation / reconstruction that focuses on return of function and condition of old buildings that were damaged, adjusted for the originality of the building.

Figure 4. Action preservation plan of ancient buildings in the area Peunayong
Conclusion

Peunayong, as Indonesian -especially Aceh- cultural heritage object, need to be preserve, not only for its historic or aesthetic value but also for its contribution in nation cultural determination. Earthquake and tsunami had destructed some of Chinese architecture in peunayong. Preservation will be able to give a new life for the community as well as the region. This action can be supported by activities transprogramming or
function crossprogramming. It will be able for building function replacement with new relevant actives. Furthermore this study emphasizes on Peunayong community participation, enhance community activities and improve cooperation between governments and cultural organizations to protect the existence of ethnic Chinese Communities in Banda Aceh as minorities.

REFERENCES