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## Reuse building materials ruins in post-earthquake reconstruction method in Bantul

Kahar Sunoko<sup>a\*</sup>, Josef Prijotomo<sup>a,b</sup>, V. Totok Noerwasito<sup>a,b</sup>

<sup>a\*</sup>Doctoral Program, Department of Architecture, Institute of Technology (ITS) Surabaya

<sup>a,b</sup> Department of Architecture, Institute of Technology (ITS) Surabaya

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### Abstract

Phenomenon after the 2006 earthquake in Bantul marked the re-use of building materials in the construction of residential ruins after the earthquake that done by the victim as the practice of architecture without architects. This research to get answers about the reuse of materials (building materials) ruins after the earthquake and ideas. This research was conducted in naturalistic paradigm with qualitative methods, provides a method of post-earthquake rebuilding homes that can be done alone by the occupants by reusing building materials rubble without guidance practitioner (architect).

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*Keywords:* reuse; construction material ruins; post-quake; Bantul; architecture without architects.

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### 1. Introduction

Indonesia is one country that has a high level of seismicity in the world, earthquakes are caused by the interaction plate (Nizam, 2010). In the 21st century there have been several tectonic earthquakes include Java earthquake May 27, 2006 with 5,716 deaths (Parikshit, 2006). Failure dwelling as a shelter from the earthquake,

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\* Corresponding author. Tel.: +62-81392053103  
Email : [kaharuns@gmail.com](mailto:kaharuns@gmail.com)

making victims homeless. Ikaputra (2008) illustrates that the dwelling is damaged or destroyed coloring aftermath of the earthquake in Bantul, 2006. The victims were homeless and had to live in makeshift shelters until permanent homes can be rebuilt. Westover (2009) states that after the earthquake is generally portrayed the rubble piled in the respective location of the building as the main sights. This is corroborated by Setyonugroho (2013) and Andriani (2013) that the quake caused damage ruins the tangible remains of a building that is widely available around the location of the quake. Pernyataan-statement above gives an understanding that among the characteristics of the post-earthquake situation is the availability of materials rubble.

Lizaralld (2006) stated that the reuse of demolition material or rubble old in spontaneous settlements built by the residents themselves. Marcella (2011) explains that people choose to collect the debris of their home building materials, select and reuse it. Explanation Setyonugroho (2013) on the post-earthquake activity begins with cleaning debris and sifting sort of building material that can still be used. Reuse of existing materials have constraints in terms of availability and strength.

A phenomenon that occurs in the reconstruction after the 2006 earthquake in Bantul Yogyakarta showed earthquake victims who build their own homes, well done and their own family or community worked together, with the reuse of material ruins his house, before any aid or assistance either from the government or agencies donation other (Sunoko, 2008). Referring to Mentayani (2012) and the Empress (2013) then the phenomenon illustrates the practice of "architecture without architects".

This list indicates the gap and the important things to be formulated in the research problems, namely: the relationship between reuse material (building materials) ruins, shape / form, construction, and wisdom in architecture without architects after the earthquake in 2006 in Bantul. So the research question is how committed the method of earthquake victims in the reuse material (building materials) ruins after the earthquake and ideas in the process of realizing the architecture without architects after the earthquake in Bantul ?. The research objective was to find a method that is built on the understanding (local knowledge) about the use of materials in architecture without architects after the earthquake that can be input to develop a more comprehensive understanding and led to new methods in post-earthquake architecture. The theoretical benefits of this research is knowledge about the reuse of materials in architecture without architects of post-earthquake. Such knowledge if it can be used as a post-earthquake reconstruction method that can be applied in similar cases adaptive dynamics after the earthquake that occurred in the future.

## **2. Methods**

Based on the purpose of research is to gain an understanding of the use of material debris and ideas in the process of realizing the building architecture without architects after the earthquake, this research requires not merely see empiri physical but also interact with respondents in depth, referring to Groat and Wang (2002) and Muhajir (2002) as empirical field studies should look at the phenomenon as a whole (holistic) and contextual, then the realm of research is a qualitative research method of naturalistic study. Muhajir (2002), and Sudaryono (2003) that the consequences must be fulfilled in doing research with a naturalistic approach. Consequences that must be met by the researchers include: the context of the natural, human instrument, purposive sampling, and data analysis inductive.

### **2.1. The object and location of research**

This research was conducted in the area of Bantul, so the focus is not growing too wide then the initial criteria need to be established, although not rule out developing next time in the field. The initial criteria are: building the house was built after the earthquake up before reconstruction assistance by the government and institutions donations implemented, carried out independently without the help of reconstruction funds from the government or agencies of donations after the earthquake the other, built with construction utilizing the material ruins, until today still functioned, and there is active development actors that will provide information.

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