



ASEAN-Turkey ASLI (Annual Serial Landmark International) Conferences on Quality of Life 2016  
AMER International Conference on Quality of Life, AicQoL2016Medan  
25 – 27 February 2016, Medan, Indonesia

## Designing the Invention House Assessment Form for Kuala Krai, Malaysia

Thuraiya Mohd<sup>a\*</sup>, Mohamad Haizam Mohamed Saraf<sup>a</sup>, Siti Fairuz Bt Che Pin<sup>a</sup>,  
Mohd Nasrudin Hasbullah<sup>b</sup>

<sup>a</sup>Department of Real Estate Management, Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, Perak, Malaysia

<sup>b</sup>Department of Architecture, Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, Perak, Malaysia

---

### Abstract

Floods can cause damage to homes. Some houses which have been significantly damaged, destroyed, or inhabitable. Inherently, victims should be given temporary or permanent houses depending on the degree of damage to their houses. Therefore, an assessment of the degree of house damage must be carried out as a direction for the recovery effort. Thus, this research seeks to design a House Damage Assessment Form. This form has been established by having an in-depth interview with experts involved in MERCY Malaysia and a literature review of the evaluation forms used by other countries to assess the degree of house damage post-disaster.

© 2016 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license  
(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the Association of Malaysian Environment-Behavior Researchers, AMER (ABRA malaysia)

*Keywords:* Flood; degree of housing damages; house damage assessment; post flooding

---

---

\* Corresponding author. Tel.: +00000000; fax: +000000000

E-mail address: [thuraiya.mohd@yahoo.com](mailto:thuraiya.mohd@yahoo.com)

## 1. Introduction

The past few decades have witnessed a rapid expansion of population in Malaysia. The population was 10,881,000 in 1970 but in 2013, the statistics indicated that the population in Malaysia has risen to 29,947,600 (Malaysian Department of Statistics, 2015). The increasing population has also resulted in an increase in the number of property ownership. Therefore, a greater percentage of the country's land area, often in areas that previously were seen as being unsuitable for urban development and human settlement, are taken up to cater to the need for accommodation (Eves and Wilkinson, 2014). This increased number of properties, changes in water collection and flows and poor drainage system coupled with heavy monsoon rainfall, intense convection rain storms and other local factors have caused seasonal floods in Malaysia (Chan, 1995; Eves and Wilkinson, 2014). Following such disaster, there is often a tally of the preliminary damage assessment in respect to the injuries, loss of lives, cost of damage and destroyed properties. With these disasters attracting considerable media attention, people are more aware of the damage that occurred at the affected area. There have been numerous studies pertaining preliminary damage assessment to buildings after a flood. In tandem, there are also many ways of assessing damage that have been carried out in different countries after the event of natural disasters.

There are several guidelines for assessing the degree of building damage which are prepared by government agencies, researchers, local authorities and non-governmental organizations (NGO). In 2009, Attaullah Shah, Hamid Mumtaz Khan and Ehsan U. Qazi outlined the evaluation of the buildings destroyed or damaged due to flooding in Pakistan. The evaluation of damage is made on mud houses which are the most common type of building structure in Pakistan (Shah A, Khan, H, M. and Qazi E, U., 2009). In USA, Federal Emergency Management Agency (FEMA) has developed an operations manual to standardize the procedures in preliminary damage assessment nationwide. There are several state authorities in USA, like New Jersey and Florida, which reviewed this operations manual and did some modification to suit the type of disasters that their states often receive. Apart from that, there are also many literature that emphasized on residential properties damaged from hurricanes and floods (Hodde B. H, 2012; Federal Emergency Management Agency of USA, 2012). Different countries are likely to have different degree of housing damage. It is because, it has different construction methods, materials used and the nature of the flood disaster. In fact, in Malaysia, there is still no standardized damage assessment used by the authorities or relevant agencies in assessing the degree of housing damages after a disaster. As a result, errors in assessing the degrees of housing damages and providing inaccurate type of assistance may occur. Therefore, the first objective in this research is to design a Housing Damage Assessment Form. The form will be used to achieve next objective which is to identify the number of houses damage in the affected area. The area of focus in this research is Kuala Krai, in the state of Kelantan. This research is an expansion of an empirical study conducted earlier on determining a model on the degree of house damage for the flood affected area in Kuala Krai. Hence, with the model of the degree of house damage that has been developed, this paper will discuss the formation of the invention House Damage Assessment Form. This form has been established by conducting an in-depth interview with five (5) experts involved in MERCY Malaysia to assess the house damage post flooding. Besides, a literature review on the evaluation, observation for assessment forms used by other countries to assess the degree of house damage post-disaster was also undertaken. The modifications and improvements have been made to suit with the flood disasters and building structures in Malaysia.

## 2. Literature review

Many ways of damage assessment been carried out from different countries after the event of natural disaster. There are several guidelines for assessing the degree of building damage prepared by government agencies, researchers, local authorities and non-governmental organizations (NGO). In concordance with the variety of the damage assessment forms, different countries likely to have different construction methods, materials used and the nature of the flood disaster. The following damage assessment forms are laid down as the following.

Download English Version:

<https://daneshyari.com/en/article/5126000>

Download Persian Version:

<https://daneshyari.com/article/5126000>

[Daneshyari.com](https://daneshyari.com)