THERMAL ASPECT OF TRADITIONAL TAMBI HOUSE

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ABSTRACT

House presents special problems for design in relation to climate as the house accommodates variety of uses over 24-hour period. It is a worldwide view including the tropical countries that traditional houses are more conscious to the prevailing climate and can provide comfortable internal space. One of traditional house in upland Central Celebes Indonesia called Tambi, is believed to be responsive to the tropical upland climate and thermally comfortable. But yet there still no empirical evidence to approve that Tambi house is truly thermally comfortable and climatically responsive. This study aims to investigate thermal aspect of Tambi house and to analyze the effectiveness of its respond to the tropical upland climate.

Field studies method and simulation studies method have been employed to achieve the aims of this study. Field studies have been used to measure external and internal climatic conditions on typical traditional Tambi houses and to investigate thermal comfort of the people around Tambi houses. Simulation studies have been used to predict thermal condition of Tambi House on coolest and hottest month of the year using ArchiPak software version 5.1.

The field and simulation studies showed that typical traditional Tambi houses cannot always provide comfortable internal space on 24-hours period. Underheating condition was experiencing in the house for most of the night time which means that Tambi respond to the prevailing climate was not very effective. It was a limitation on its building elements in modifying the external climate which causing thermal discomfort in the house. It was also confirmed from the field and simulation studies that the internal temperatures were more satisfactory than the external temperatures. With the investigation of thermal comfort survey, another result has been found that the people around Tambi houses are actively adapted through their clothing value to reach thermal comfort.

Keywords: Tambi House, thermal aspect, traditional house, tropical upland climate.