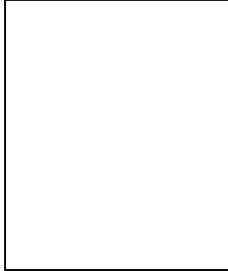


Weight and Weight Balance of Japanese clay-walled and timber-framed House



Hideo IZUMIDA, Dr. Eng.(Tokyo Univ.), M.A.(Tsukuba Univ.)

Associate Professor in Asian Architecture, Dept. of Architecture and Civil Engineering,

Toyohashi University of Technology

Address: Tempaku, Toyohashi, Aichi, 441-8105

Tel: +81-532-44-6832 Fax: +81-532-44-6831

e-mail: izumida@tutrp.tut.ac.jp

ABSTRACT:

Japanese was used to build their house of timber for frame-work and of clay for wall-work for more than 300 years. But, in order to cope with large housing demand of post-war born couples during 1970's and 1980's and with the Energy Crisis (Oil Shocks) in 1970's, they changed the building materials and the construction method drastically. The house industries introduced the panel construction method from North America, which needed lesser cost and shorter construction term, and which was more airtight and insulation. Therefore, the traditional house construction method was largely neglected by the house industries during the housing boom.

However, since the middle of 1980's, the traditional carpentry has been reevaluated by scholars, architects and carpenters who believed that timber-framed method was suitable for Japanese conditions such as its climate, material and human resources, if proper measures for energy saving and earthquake resistance would be taken, while clay walling almost disappeared from the house industries except some area in Japan.

Clay walling needs to be reevaluated from various viewpoints such as structural strength, material and human resources, construction method. This article aims at examining the advantages of timber-framed and clay-walled construction method in term of its stability and solidarity, comparing total weight and weight balance among the panel construction method houses, timber-framed & clay-walled method houses and timber-framed & insulation-walled method.