

Research Trends and Results

Development of Material/Framing Knowledge Base Regarding Design Specifications of Existing Detached Timber Housing

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1. Foreword

The Ministry of land, Infrastructure, Transport and Tourism has been carrying out existing long term quality housing promotion projects or the like slated for a series of policies for existing housing distribution promotion/stock renewal. With respect to existing housing, NILIM has been carrying out the development for technology to readily comprehend its materials and framing and so forth and evaluate its performance efficiently; even in a case where there is no data such as drawings or the like. This paper reports the development of a material/framing database in regard to designing specifications of existing detached timber housing.

2. Acquisition/accumulation of material/framing data

Over about 30 years we have carried out research for design survey specifications, targeting existing housing for which housing construction operators with supply results of public financial loan housing capable of acquiring data such as drawings. In the method of research, researchers browsed the stored drawings, extracted descriptions indicating materials and framing methods and recorded data related to employ actual conditions of framing method or the like according to age brackets. In three years of research from 2011 to 2013, we have obtained actual data in regard to 1,247 cases of housing by 55 operators in total, from Hokkaido, Tohoku, Kanto, Chubu, Chugoku and Kyushu.

3. Improvement of materials/framing database

Acquired data was arranged according to hierarchical definitions, looking into layer composition of foundation and exterior walls, roofs, openings or the like on a regional basis, from the surface (visible part) to interior (invisible part). Although to make descriptions of drawings or the like in data for housing was intended according to changes in a chronological order, it was presumed from the beginning that

information not described in drawings would be plentiful as it was customary to refer to common specifications in building design. Accordingly, for the documents of specifications of the former Public Loan cooperation which had also been referred to in designs for timber housing, we analyzed them in descriptions in respect to specifications for each year in the targeted period of design specification research and carried out a similar arrangement. Moreover, with reference to operators for whom cooperation was not obtained, we carried out interviews for items incapable of corroboration by descriptions on drawings or the like. s.

According to these operations, we integrated the data obtained by research in three years, making districts where housing was located, years of construction or the like searching conditions, assuming a combination of materials/framing method, and have experimentally produced a material/framing method which assumes/indicates a combination of material/framing methods considered to have been general in each district/generation.

4. Deliberation issues in the future

Deliberating indication method for information and operation methods to readily be utilized in practical businesses in actual research for existing housing and operating method for database systems, we are prepared to establish this method. [Reference]

- 1) Comprehensive technology development project
Development of capability evaluation technology for existing housing or the like slated for existing housing distribution promotion/stock renewal (2011 – 2014)
<http://www.mlit.go.jp/tec/gijitu/kaihatu/pdf/soupro011.pdf>
- 2) Research on grasp method for material/framing method of existing timber housing (-1) (-2), Architectural Institute of Japan Convention for fiscal 2013 (Hokkaido) Academic Speech synopses collection 5487 – 88, pp997 – 1000. 2013. 8