

Research on Evaluation and Countermeasure Technology to Ensure Safety During Daily Life Activities of People Using Architectural Space

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1. Background to and Purpose of the Research

As a reflection of the aging of society, many accidents occur within buildings in the course of daily life, including falls in corridors, falling down stairs, and so on. When estimated based on statistics, the number of deaths caused by such accidents will rise as rapidly as traffic accident fatalities in the future. Although there are cases where such accidents are caused by the lack of care of building users, there are also cases where they are the result of inadequate awareness of the occurrence of accidents by building designers and managers, and if these cases are analyzed, it will be possible for users, designers, and managers to each clarify risk through accident cases, and to prevent many accidents by exercising a specified degree of care.

This research collected examples of accidents which have occurred in the normal daily lives and activities of users (building users) in such buildings at the same time as it clarified accident occurrence mechanisms and studied accident prevention measures. The results have been collected and released to the public on the internet since mid August 2009 as the Building Accident Prevention Knowledge Base (Fig. 1).

2. Outline of the Building Accident Prevention Knowledge Base

To prevent accidents in buildings during use, it is necessary to deal thoroughly with each part of a building according to the way it is presumably used or the way it is actually used, and in many cases this cannot be covered by building standards which are uniformly applied. The Building Accident Prevention Knowledge Base (below called, "Knowledge Base") must reduce accidents caused by carelessness in buildings (and on lots) by serving as reference materials to encourage designers, managers, and users to exercise adequate care.

The Knowledge Base deals mainly with accidents in public buildings, and contains 750 (scheduled to be increased regularly in the future) accidents and near-accidents, judicial precedents concerning accidents

caused in buildings which were collected through questionnaire surveys, searches for judicial precedents, and reports on accidents in schools, permitting people to search for and refer to accidents based on the type and degree of accidents, places accidents occur etc. And in addition to these, the Knowledge Base provides a wide range of knowledge and information, by permitting searches for related records and documents, providing survey reports, and permitting experts to contribute information regarding 110 accident patterns prepared by classifying accidents and countermeasures and precautions for each of these patterns. And the knowledge base is also equipped with a function for the submission by building users of their experience of accidents and of near-misses which did not become real accidents, and a function allowing the contribution of information such as examples of innovations introduced during design and execution and during building operation regarding measures to prevent everyday accidents on the assumption that building designers and building managers will contribute information. And to expand information of use in predicting accidents, it is counted on to aggressively provide information from people in various fields who have referred to the Knowledge Base.



Figure 1. Building Accident Prevention Knowledge Base (Top Page)

<http://www.tatemonojikoyobo.nilim.go.jp/>