

On the relationship of demand for buildings due to earthquakes and the framework of participation of civilian architects in Kumamoto earthquake 2016

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Abstract

In the “2016 Kumamoto earthquake”, lifesaving activities and various disaster relief activities ,eg water distribution and food provision, were conducted in both public and private good intentions. Also as architecture engineer's activities, the design of the emergency investigation and restoration of the stricken building was carried out by both public and civilian ones. The non-life insurance earthquake survey is a representative example of the emergency survey conducted by the private sector, and the “Postearthquake Quick Inspection (PQI)” is a typical survey conducted as a public emergency survey.

Following “PQI”, “Damaged Building Report inspection (DBRI)” and “Public Expense Building Dismantling Inspection (PEBDI)” were conducted.

In this paper, we conducted three analyzes on the activities of architecture engineers in "2016 Kumamoto Earthquake". The first is to analyze the relationship between “PQI” judgment results and “DBRI” judgment results. This analysis shows that there is a correlation between the number of judgments for “PQI” and the number of judgments for “DBRI”. This makes it possible to predict human resources to be input to “DBRI” based on the number of judgments of “PQI” which is the initial correspondence. The second is the transition analysis of civilian architecture engineers who participated in “PQI”. These analyses were carried out by examining the materials published by government agencies and private organizations. From this analysis, it can be seen that civilian architecture engineers in the affected area are much more unstable in participating in “PQI” than civilian architecture engineers outside the affected area. As a result, it was concluded that it would be desirable to recruit private construction engineers from outside the affected area for “PQI” participation. The third analyzed how many architecture engineers participated in the determination of "PQI". From 1,100 to 1,200 engineers participated in the judgment of 10,000 cases, and this figure is constant regardless of region and time. Since the number of engineers required for judgment can be calculated immediately, it is thought that it will be useful for formulating a “PQI” survey plan. Those results seem to be useful for the smooth operation of the initial emergency survey and for further recovery.