

FOREWORD

An earthquake damage gives us so many lessons for developing the advanced seismic design method to protect human life and property from such hazard. The Japanese building code for seismic design was revised in 1971 in due consideration of the damage to buildings in the 1968 Tokachi-oki earthquake as well as the progress of the earthquake engineering. Re-estimation of seismic performance and strengthening of existing buildings constructed before the code revision was also initiated since then.

Exactly ten years after the Tokachi-oki earthquake, severe earthquakes attacked the Japan Islands three times in 1978. The Izu-oshima Kinkai earthquake with $M=7.0$ in Richter scale occurred in January within 30 kilometers from the hot spring resort towns in Izu Peninsula. A couple of the Miyagi-ken Oki earthquakes of $M=6.7$ in February and $M=7.4$ in June occurred within a hundred kilometers from one of the most populated cities, Sendai.

Comparing the damage due to these earthquakes with the damage in the 1968 Tokachi-oki earthquake, the progress of the earthquake engineering seems to have mitigated steadily the earthquake damage to structural system of individual buildings. However, it should be noticed that the weakpoint of the existing seismic design method or design philosophy exists in a lack of the consideration of seismic performance of overall system of building including non-structural elements and of a total system of urban structures.

Our homework by the next severe earthquake would be to develop a seismic design method for overall system of buildings and urban structures as well as an individual structure.



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