

## Guest Editorial

The massive collapse of concrete structures encountered at Hanshin-Awaji great earthquake on 17 January 1995, can be regarded as priceless learning and verification of the capability of modern concrete engineering accompanying the incredible loss of human lives and gigantic social damage. We understand that it is definitely a duty of the concrete engineers to study the real causes for failure and to obtain engineering lessons from our bitter experience. Under this background, this special edition is prepared being directed mainly to the analysis and verification of structural concrete.

During the past 2 years after the earthquake, surveying of the disaster and detailed data of damaged structures have been accumulated. These materials will be released for public use by a CD-ROM-type data base of great capacity. At the same time, academic efforts have been headed for the analyses of collapse mechanism which undergoes high non-linearity, post-evaluation of seismic design concepts and technicalities applied when the damaged concrete was constructed in the 1960s. These activities are expected to clarify the causes of the huge collapse of concrete structures, as well as to verify modern structural concrete knowledge in our hands. Through this information, we believe that great progress on seismic design will be brought about and it will contribute to the proper strengthening of the enormous numbers of non-seismic existing structures. These investigations which require collaboration and much energy are still on the way, but it is thought to be the right time to issue intermediate reports for encouraging further scientific discussions worldwide.

This special edition consists of damage surveying and collapse analyses of nonlinearity which covers building, transportation facilities, underground stations and base piles made of concrete. In order to understand the industrial background, a historical review of seismic design in Japan is included. If the information, herewith, on the concrete engineering in this earthquake would be of interest to readers, it would be of great pleasure to the guest editors.

**Hajime Okamura and Koichi Maekawa**