Joint Report

on

1995 Kobe Earthquake

by

INCEDE, ERS and KOBEnet

December 1999

INCEDE: International Center for Disaster-Mitigation Engineering, IIS, University of Tokyo
ERS: Earthquake Resistant Structure Research Center, IIS, University of Tokyo
KOBEnet: Voluntary Information Network for Earthquake Disaster Mitigation

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Abstract

This report is one of the outcomes of various activities jointly carried out by INCEDE (International Center for Disaster-Mitigation Engineering), ERS (Earthquake Resistant Structure Research Center) and KOBEnet of the Institute of Industrial Science, the University of Tokyo to exchange information about Kobe Earthquake among various concerned people and organizations. This volume contains fifteen technical papers related to the Kobe Earthquake in addition to a introductory article on KOBEnet at the beginning which summarizes last four-year activities of this volunteer organization. The technical articles cover the areas of ground motion, soil and geotechnical engineering, structure behavior, damage inspection, earthquake insurance, risk management, etc. The articles are written by the Japanese researchers associated with KOBEnet who have been deeply involved with Kobe Earthquake related research The articles reflect the characteristics Kobe earthquake and its impact on infrastructures. This reports provide readers a wealth of information on Kobe earthquake disaster.

Keywords: Kobe Earthquake, Earthquake Risk Management, GIS, Ground Motion, Quick Damage Inspection, Earthquake Insurance, Seismic Risk Management, Macro-Zonation

International Center for Disaster-Mitigation Engineering

FORWARD

The fifth anniversary of the 1995 Hyogoken-Nanbu (Kobe) Earthquake is coming soon. When I visited Kobe one week ago, the city was illuminated by the annual light festival '*Luminarie*'. So long as walking along main streets in Kobe, it is difficult to find the proofs of the disaster. The infrastructures and buildings devastated by the earthquake have been rebuilt within the last five years. But we cannot and should not forget the massive disaster.

As a joint effort of International Center for Disaster-Mitigation Engineering (INCEDE), the Earthquake Resistant Structure Research Center (ERS) and KOBEnet, all based at the Institute of Industrial Science, University of Tokyo, this volume contains fifteen technical papers related to the Kobe Earthquake. Initially we planned to publish this technical volume much earlier. Most of the papers were written and submitted one to three years ago. But due to some reasons, the publication was delayed. I feel really sorry to the contributed authors.

INCEDE published a special issue of INCEDE Newsletter two weeks after the Kobe Earthquake as the first English publication written by researchers. The stage of reconstruction was also reported in 1996 in Volume 4 (Number 4) of the newsletter. During the last five years, INCEDE promoted several research programs and hosted many seminars related to earthquake disaster mitigation. This volume is also a part of such INCEDE's activities.

ERS is a research group consisting of about ten laboratories (professors) in the Institute of Industrial Science. The readers of this volume might recall the annual bulletin of ERS with green cover, which is counted more than thirty volumes (over thirty years). The research field of the members of the ERS covers structural engineering (both buildings and civil infrastructures), geotechnical engineering and mechanical engineering. All the contributors of this volume are members of ERS.

KOBEnet is a voluntary organization established in January 1995 and has been engaged in various technical voluntary activities, e.g., information dissemination through Internet and newsletter, support of foreign reconnaissance teams, archives of technical and non-technical materials related to the earthquake. The library of KOBEnet is still open to the public as well as researchers in the institute and it has one of the largest stocks related to the Kobe Earthquake. Many researchers from other universities in Japan also joined the activities of KOBEnet, as found in the first paper of this volume.

Since 1962, Institute of Industrial Science has been in Roppongi, Minato-ku, Tokyo, for more than 37 years. Recently relocation of the institute to Komaba, Meguro-ku, Tokyo, has started. INCEDE moved to the new campus in 1998 and other members of ERS and KOBEnet moved in 1999 or will move in 2000. At the time of millennium, we are moving to the new development of our institute. Lessons learned from the Kobe Earthquake are one of the most important issues to carry on to the next century.

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