FOREWORD

In the past, structural research people have learned much from the disaster brought by severe earthquakes. Even recently among them, the soil liquefaction by Niigata Earthquake in 1964 and the shear failure of reinforced concrete short columns by Tokachi-oki Earthquake in 1968 are remembered. Unfortunately an another feature in damage was brought to us by two earthquakes attacked eastern Japan in 1978: Dagame in steel structure buildings.

For a long time steel structure buildings might be considered tough against earthquake excitations. Indeed, steel materials have so preferable characteristics; high strength and enough ductility. However, suitable design process and appropriate fabrication techniques must be performed in order to take advantage of it. Rapid spread, however, of steel buildings interrupted its completeness. The deveopment of industry and the concentration of population require new place around cities. Such newly developed spaces were immediately covered by industrial and commercial facilities. Consequently, so many steel buildings have been built at the site where the soil conditions are mostly unsatisfactory.

Considerable damage to steel buildings frightened steel building researcher and designers. They recognized once again that considerations on fabrication techniques and site soil conditions must be required in order to reduce damage as well as the adequate design of structural frames. Moreover they are confronted with a very difficult problem; how to design "safe" buildings.

K. Takanashi

Koichi TAKANASHI
Associate Professor
Institute of Industrial Science
University of Tokyo