THE RECENT EARTHQUAKE DISASTER IN TURKEY

On February 6, 2023 two disastrous earthquakes, the first with a moment magnitude of 7.7 and the second with a magnitude of 7.6 occurred nine hours apart on two different faults in the East Anatolian Fault Zone within the boundaries of the province of Kahramanmaraş, Turkey. Besides more than fifty thousand lives lost, the two earthquakes and their aftershocks caused enormous material damage in the eleven provinces comprising the disaster area. We remember those who lost their lives, express our sympathies to their families and loved ones and wish quick recovery to the survivors.

The most recent disaster of comparable scale is the 1999 İzmit Earthquake of 7.4 magnitude, which caused around seventeen thousand casualties. At the time, it was presumed that the tragic experience of the İzmit Earthquake would serve as a lesson and a warning sign to the planners, designers and constructors in the field of civil engineering to improve their evidently deficient practices. Indeed, several new versions of the seismic code, each introducing stricter rules than the preceding one, were drafted in the years following the İzmit Earthquake. New legal documents were issued to improve the construction supervision system. Moreover, a variety of design software were developed. The quality of concrete and reinforcing steel has relatively improved as the result of recent technological advances.

Regrettably the preliminary reconnaissance reports indicate a rather heavy structural damage resembling that of the İzmit Earthquake. Besides other contributors, the Turkish civil engineering practice of the last two decades is also accountable for the damage. However, a fair criticism should also acknowledge the fact that the recent disaster was a combination of several earthquakes of enormous damaging power, stemming primarily from their exceptionally high spectral accelerations. It would be a fair judgement to observe the improvements in the structural performance since the İzmit disaster; however, they are still far from satisfactory.

Among other factors leading to deficiencies in the civil engineering practice, the following two appear to be the most critical:

1. Deterioration in civil engineering education: The standards of civil engineering education have been significantly lowered. Consequently, the number of civil engineering graduates has excessively increased at the cost of deterioration in their professional qualifications.
2. Failure to introduce a professional civil engineering system: The Higher Earthquake Council (Deprem Şurası, 2004) inspired by the İzmit Earthquake had firmly endorsed the introduction of a professional engineering system in Turkey. Despite tireless efforts of the Turkish Chamber of Civil Engineering, such a system could not be implemented.

Considering the need for a rapid information flow, the Turkish Journal of Civil Engineering decided to publish a special issue to disseminate the preliminary data on the Kahramanmaraş Earthquakes. The November 2023 issue will be devoted to this purpose. This special issue will include mainly technical notes of a descriptive nature which can be drafted in a short while and submitted soon. Naturally, full papers on the earthquakes will also be considered, provided they have the required solid scientific content. As required by the publication policy of the Turkish Journal of Civil Engineering, the papers in the special issue will have to be confined to the civil engineering aspect of the problem.

Best wishes,

Editorial Board, Turkish Journal of Civil Engineering