

Short-term countermeasures for securing cultural heritage buildings during a seismic emergency. Lessons learnt and enhancement form the 1976 Friuli earthquake.

Stefano Grimaz, Fabio Zorzini, and Petra Malisan SPRINT-Lab, Dipartimento Politecnico di Ingegneria e Architettura, Università degli Studi di Udine

The 1976 Friuli earthquake went down in history for its exemplar reconstruction phase. The Friuli earthquake was also the source and the topic of important studies leading to meaningful knowledge progresses in the seismic risk field. Among the lessons that are derived from this experience stands out the role of the organizational component during the reconstruction, based on a synergistic and collective action of various components of society. In this context, the technical-scientific component played a key role, supporting the decisions and the management of the complex processes of the reconstruction with the introduction of innovative tools. After the earthquake in Friuli, for the first time in Italy there was a systematic approach for securing and recovery of historic buildings and monuments damaged by the earthquake. This experience proved to be a useful reference for the subsequent management of emergencies and, in particular, during the earthquakes of L'Aquila, 2009 and Emilia, 2012. Securing a cultural heritage building damaged by an earthquake, in order to protect it in from the effects of aftershocks, is not simple. It is, in fact, a complex operation which must be carried out in extremely dangerous scenarios. The University of Udine and Italian National Fire Service have developed techniques for the safeguard of cultural heritage or strategic buildings and created an expertise on these topics, now recognized nationally and internationally. This objective was achieved through a process of capitalization of the experiences that has strong roots in Friuli and that has leveraged on the synergy between science and practical application. On these bases, forty years after the earthquake in Friuli, an international training school in seismic emergency response management - the SERM Academy has been instituted. The SERM Academy was established precisely in Venzone (UD), one of the town most affected by the earthquake of 1976 and the symbol of the reconstruction of Friuli.