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SEISMIC RESILIENCE OF CRITICAL INFRASTRUCTURES AND COMMUNITIES. MEXICO'S EXPERIENCE AFTER THE SEPTEMBER 2017 EARTHQUAKES. LESSONS AND OPPORTUNITIES

One of the most commonly used definitions of resilience is "the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events". When the adverse event is a destructive earthquake, obtaining an acceptable level of seismic resilience implies suggesting and implementing some economic, organizational, social and structural measures within a community. Due to its geographical location, Mexico is exposed to natural hazards, which frequently affect its infrastructure and the well-being of its communities, causing material and social damages, often accompanied by numerous human life losses. The hazard, considered to have the biggest impact upon both built environment and society of the country, is the earthquake. The occurrence of a destructive event with limited or no previous warning, can wipe off entire areas, leaving behind only debris and victims. Its effects are not only those associated to the physical damage to the built environment, but also those caused by the collateral hazards, which may appear, due to the disruption and/or complete loss of functionality of critical infrastructure as hospitals and schools and lifelines as water and energy networks. If we, engineers, as part of the affected society are not prepared to counteract the effects of major seismic events, then, as it happened in Mexico the destruction and loss of functionality of critical infrastructure is imminent and it can have repercussions not only in the social and structural fields, but also in the economy of the country. In these type of cases, the recovery process is slow and requires many resources. In order to prevent situations as those experienced after the September 2017 events in México, this paper addresses the concept of seismic resilience using as example the situations lived in, with the purpose of being able to diminish as much as possible the losses caused by future seismic events.