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TITLE OF PROJECT: **SEISMIC DESIGN AND RETROFITTING OF STRUCTURES: ENSURING RESILIENCE IN THE FACE OF EARTHQUAKES**

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ABSTRACT (150-300 words):

The objective of this presentation is to improve the capacity of structures to endure and lessen the effects of earthquakes by addressing the crucial elements of seismic design and retrofitting. Because earthquakes can seriously jeopardize the structural integrity and safety of infrastructure and buildings, seismic retrofitting and design are essential elements of resilient urban development. It highlights how crucial it is to incorporate performance-based design and the most recent seismic codes into new construction in order to ensure that buildings can withstand a range of seismic activity. After that, the conversation turns to retrofitting already-existing buildings, taking into account the enormous number of structures that were built prior to the adoption of current seismic codes. We'll look at a number of retrofitting methods, such as base isolators, dampers, and strengthening structural components. Successful retrofitting projects will be highlighted through case studies, emphasizing the benefits to occupant safety and structural integrity. The talk will explore how modern technologies, like seismic monitoring systems and simulation tools, can be used to identify structural weaknesses and improve retrofitting plans. By combining these technologies, engineers can maximize the seismic resilience of structures and ensure cost-effectiveness by making well-informed decisions during the retrofitting process. The long-term savings and decrease in financial and human losses during seismic events will be emphasized, along with the social and economic advantages of investing in seismic design and retrofitting. The talk concludes by highlighting how crucial seismic design and retrofitting are to guaranteeing that structures are resilient against seismic hazards. Engineers can help build safer and more resilient communities in earthquake-prone areas by combining creative design techniques, retrofitting technologies, and a dedication to following seismic codes. In the fields of structural engineering and urban planning, the presentation seeks to provide attendees with insights into best practices, new technologies, and the general significance of seismic resilience.

KEYWORDS: Seismic Codes, Seismic Design, Seismic Monitoring System, Dampers in Retrofitting, Structural Engineering, Structural Resilience.

CATEGORY: Structural Engineering