

Numerical Investigation of Seismic Behaviour of Building

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Abstract : Glass facade systems have gained popularity in recent times. During an earthquake, building frames suffer large inter-story drifts, causing racking of building facade systems. A facade system is highly vulnerable and fails more frequently than a building with significant devastating effects. The usage of Metallic yield damper connections (Added Damping Stiffness) is proposed in this study to mitigate the aforementioned problems. Results showed as compared to control, usage of Metallic yield damper connections (Added-Damping-And-Stiffness) exhibited a reduction of connection deformation and axial force; differential displacement between frame and facade; and facade distortion by 44.35%, 43.33%, and 51.45% respectively. Also, employing proposed energy-absorbing connections reduced inter-story link joint drift by 71.11% and mitigated detrimental seismic effects on the entire building facade system.

Keywords : damper, energy dissipation, metallic yield, facades

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