**SEISMIC RETROFIT DESIGN OF BUILDINGS OF A SCHOOL CAMPUS  
IN ISTANBUL BY DISSIPATIVE TOWERS**

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**ABSTRACT**

Conventional retrofitting of buildings by adding shear walls, column jacketing etc. are highly destructive. The buildings need to be evacuated and service is interrupted during the construction period. Moreover, the added retrofitting elements obstruct the architectural usage.

In order to reduce listed impacts of conventional retrofitting methods, external retrofitting methods which buildings can continue their service during construction period, are preferred. “Dissipative Towers” is an innovative patented system for seismic retrofitting of existing buildings without interfering with the internal spaces and without interrupting the functionality.

The towers are constructed on a rectangular reinforced concrete base with a spherical hinge below that facilitates rotational demands. Viscous dampers are radially placed in the corners of the rectangular base. The tower is connected to the building at each story level with steel beams. During a seismic event towers move together with the building hence reduce the seismic demand by providing supplementary damping.

In this paper, the design of the “Dissipative Towers” system for the buildings of a school campus in Istanbul is described. Seismic performances of the buildings before and after retrofit have been compared as result of nonlinear response history analysis in terms of story drifts, base shear and story accelerations.

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