To attain resilience of major cities after large earthquakes, damage-controlled design using energy-dissipation devices or seismic isolation techniques for buildings and city facilities are gaining popularity in high seismic zones such as in Japan. Energy-dissipating fuses concentrate the input seismic energy into limited parts of structural members with high-ductility “fuses”, keeping the main structure undamaged by dissipating the energy in these replaceable components. Buckling Restrained Braces (BRBs) can be used as one of these representative fuses. In this presentation, several applications of this concept in various structural systems will be discussed, including new construction and retrofit of existing buildings.

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