Innovative Technologies for Disaster Mitigation in Residential Units

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ABSTRACT

Disaster mitigation for residential units requires the development of innovation technologies and new analysis methods. Current research at MIT, in conjunction with Sandia National Laboratories, examined three scenarios for this analysis and innovation development, building upon recent research in the system characterization of light wood framed units. The scenarios focus on a cumulative research plan, starting with the characterization of component performance within the structural system, building towards an analytical model of the system performance, and then incorporating active control devices that use the structural system model to gauge actions and response. To further analyze the incorporation of innovations within residential units, a systematic methodology examines the multiple performance dimensions of a specific innovation, an Energy Producing Wall Unit, with respect to its aesthetic, operational, and construction process performance impacts.