

Structural Connections Made Three Times More Resistant To Earthquake Destruction

National Taiwan University of Science and Technology



Brittle fracture often occurs in steel beam-column connections during earthquakes, resulting in damage to the building, or sometimes complete structural failure. Sheng-Jin Chen, Ph.D., a professor at the National Taiwan University of Science and Technology, invented the “Steel Beam-to-Column Connection” in 1993. This new design, which relies on flange plates and web plates, helps disperse energy by providing ductile steel beam-column connections.

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“The invention disperses outward energy more efficiently, which makes this type of building up to three times more resistant to earthquakes than conventional H-type steel bar construction.

Because less steel is actually used with this type of design, the cost of raw materials is also reduced. Taipei 101, the

tallest building in Asia at 1,651 feet, was built with this technology because it is located on a seismic zone.

“The Steel Beam-to-Column Connection” method has been rapidly accepted around the world. Since its disclosure in 1994, 66 technology transfer cases have been derived from the technology. Sixty skyscrapers have also been built using this design method.

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