

Scottrade Center: A Model of Restraint Thanks to BDC, Inc. & Vibro-Acoustics

Scottrade Center, the 19,150-seat arena and home to the St. Louis Blues, recently awarded a contract to Murphy Company who enlisted Midwest Machinery to provide new Marley cooling towers at its downtown St. Louis location. BDC, inc. (through its principal, Vibro-Acoustics) was contracted by Midwest Machinery to provide seismic spring isolators for the new Marley cooling towers at its downtown St. Louis location.

Cooling towers are a challenge when it comes to restraint, given that they are some of the heaviest pieces of equipment to be found on a rooftop. Their change in weight over the course of the day (wet vs. dry) presents a problem when isolating them for vibration or restraining them for wind or seismic activity. Noise control is an issue, too.

The new spring isolators will ensure that vibrations are not transferred into the facility, not only protecting the towers and attached buildings from earthquakes but also restraining them against such shifts in weight and high winds.

Seismic restraints are required elements for the cooling towers, according to the International Building Code (IBC) put out by the International Code Council. While the state of Missouri (where Scottrade Center is located) leaves the creation and enforcement of building codes to local jurisdictions, it does require that state-owned facilities and

public buildings be designed in accordance with the latest edition of the IBC.

Since 2000, the IBC has been updated every three years and has included standards based on design requirements from the American Society of Civil Engineers (ASCE 7-05) as well as other sources. These standards include mandates for the use of seismic restraint for many kinds of buildings, even in areas where seismic activity tends to be rare.

Earthquake damage to various building systems (electrical, plumbing, cooling, etc.) can be extensive even when there is no structural damage to the actual building. And while the damaging effects of earthquakes are of concern throughout North America, Missouri is a significant area of focus because of its location in the New Madrid Seismic Zone (NMSZ).

The seismic spring isolators being installed at Scottrade Center have the added benefit of dampening vibrations from other sources, such as moving equipment, wind, and so on, as well as minimizing the noise from these towers. The restraints themselves are being furnished by Midwest Machinery; Murphy Co. will act as the installing contractor.

If you are in the process of updating or expanding a building, or having elements like cooling towers replaced, you will want to make sure that all elements are properly restrained according to IBC guidelines. Contact BDC, Inc. for more details about kinds of restraints, codes, or steps in the installation process. We're here and at your assistance.