LESS THAN $10M
MERIT AWARD

Davis Conference Center
Layton, UT

Photo by Jacom Stephens.

The Davis Conference Center was designed to provide state-of-the-art convention and reception spaces to the communities of northern Utah. The 42,420 sq. ft conference center, built adjacent to an existing hotel, houses a grand ballroom with movable partitions that can be used to divide the space into eight smaller areas. The facility also includes smaller meeting rooms and reception areas connected by a concourse that runs the length of the facility, terminating at a steel and glass turret.

The ballroom and meeting rooms on either side of the concourse feature conventional steel framing and chevron braces. The concourse was framed separately with 8" square tube columns supporting a barrel-vaulted roof constructed of rolled tubes.

A large component of the vision for the project was to provide open clerestory windows within the concourse that would be unobstructed by the presence of bracing. The main concourse roof diaphragm is significantly higher than the rest of the building. To provide lateral stability without using bracing or moment frames in the concourse, steel slip collar connections were added to each concourse column at the level of the adjacent braced roof diaphragm. The slip collars were designed to transfer lateral shear forces directly from the concourse columns to the braced portions of the building on either side. They were also designed to slip to accommodate anticipated deflections in the adjacent roof structure from snow or live loads.

To prevent undesirable sound transfer through the slip collars, each column was wrapped with an adhesive-backed elastomeric material at the connection to

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Engineering Software
RAM Steel
RISA-3D

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General Contractor
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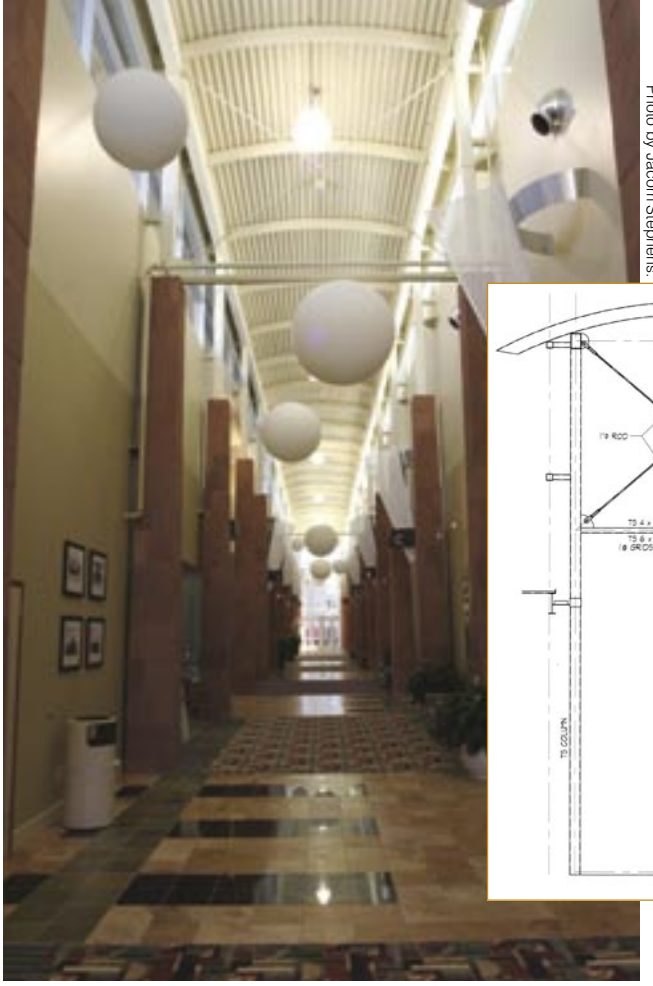
deaden sound transmission. This method of lateral support eliminated the need for any transverse bracing along the length of the concourse. Only minimal bracing was required in the longitudinal direction at the ends of the concourse where the elevation difference between concourse and the adjacent roofs was the greatest.

The architectural design called for two 70'-tall freestanding towers to be constructed at the main entry. The towers were clad in sandstone veneer and support 15'-tall exposed aluminum frames. This presented an engineering challenge due to high seismic forces generated by the weight of the sandstone veneer and the high design wind loads required by city ordinance. To design a stable framing system for the towers, three dimensional computer models were developed and subjected to the design earthquake and wind forces. The results indicated that the towers could be efficiently constructed using 5" square steel tube segments with fillet-welded connections. Metal stud infill framing and plywood sheathing provided the backup to anchor the sandstone veneer. ★



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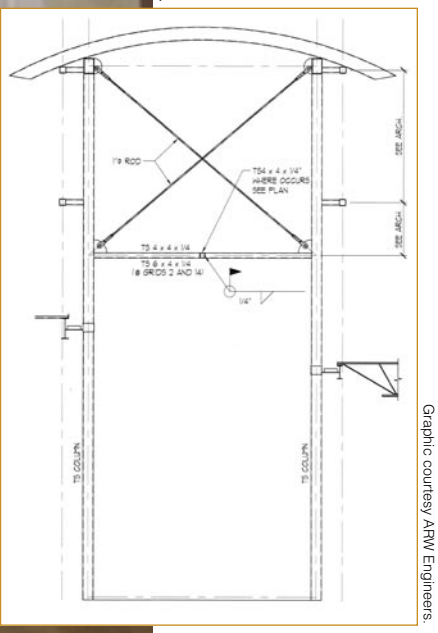

Graphic courtesy ARW Engineers.