

How Boise architectural firm CSHQA's new building saves energy

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Low-energy LED fixtures light the exterior of Boise architecture firm CSHQA's new headquarters. Boise architectural firm CSHQA completed its move to its new headquarters in early August.

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Saving money on energy wasn't the only reason CSHQA undertook a \$2 million overhaul of an old Downtown warehouse.

There's a marketing angle as well. The company's new headquarters at 200 W. Broad St. serves as a sort of showroom for clients.

"The building is showing all kinds of different things that can go into a building," Business Development Manager K.K. Lipsey says.

The renovation project was a wholesale transformation of the once-abandoned warehouse, which was built in the late 1950s. A bright, open work space with cheery colors and advanced-looking fixtures replaced bare block and brick walls. During the daytime, natural light pours in through large windows and a series of skylights.

Even the ceiling looks different than it did the past few decades. Crews pulled thousands of square feet of insulation out of it, exposing original joists and boards.

One of Boise's iconic firms, CSHQA took root in 1889. Even before the turn of the 20th century, the company's founder, a Scotsman named William Campbell, and his partners designed some of Idaho's best-known buildings, including the Idanha Hotel in Downtown Boise, the Albion Normal School and Boise's central fire station.

As new partners joined the firm, its name changed to reflect their participation. In 1979, it became Cline Smull Hamill Quintieri Associates. Six years later, the name was shortened to CSHQA. Besides architectural services, the company provides planning and engineering.

On Aug. 1, CSHQA completed its move into the new-old building from the company's former headquarters in the C.W. Moore Plaza, 250 S. 5th St.

The most impressive innovation at CSHQA's new home might be its main heating and cooling system. It has no gas or electrical heat and no air conditioning.

Instead, dozens of 5/8-inch tubes run across the length and width of the floor, covered by about 2 inches of concrete. When the system needs heat to maintain room temperature, it pushes a liquid that has

absorbed geothermal energy through the tubes. The energy radiates upward through the concrete and heats the building.

The liquid inside the tubes isn't from Boise's geothermal wells. Instead, both the geothermal water and tube liquid pass through a device resembling a car radiator that transfers heat to the tube liquid, which contains glycol.

The cooling process is similar. When the outside temperature is too hot, the system pushes regular municipal water through a heat-exchange system to cool the glycol-containing tube liquid, which absorbs heat inside the building, cooling it down.

The drawback to the floor heating and cooling system is that it takes the better part of a day to adjust to big changes. The building has a traditional heating and cooling system to adjust for sudden, large increases and decreases in temperature.

The building has several other technologies that are designed to make it a more enjoyable work space and save energy.

Several collapsible cloth ducts supply fresh air to the interior. Even beyond the material, which makes airflow quieter, the overhead ducts are unusual. Instead of a few big vents distributed over long distances, CSHQA's ducts have small vents about every 8 inches. The idea is to keep air moving more efficiently without creating drafts.

Another innovation is a system that harvests heat from workers' computer towers. This one has yet to be installed, but here's the concept: A valve on the back of the computer will open up when the machine is turned on. A fan will suck air from inside the computer tower into a small duct. That duct will connect to a larger arterial duct that's pulling in air from several computers in the same area. The arterial duct and several others like it will connect to a few larger conduits. When the weather's hot, warm air from the computers will vent to the outside. When it's cold, the air's heat will be channeled into the main heating and cooling system.

In the long run, CSHQA believes all this technology will save money for the company.

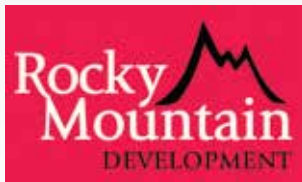
Some Buildings are Born with Good Bones

and are simply waiting to be re-discovered. CSHQA's new home at 200 Broad Street, at the edge of Boise's urban core, was one of those buildings. Together, CSHQA, Jordan-Wilcomb Construction, and Rocky Mountain Development saw the potential for something special in the nearly 60-year-old warehouse. We saw an opportunity to give back to our community, truly test our innovation, design, engineering and construction skills, and create a new visual and sustainable landmark in the City of Trees. To everyone who helped make it happen – Thank You!



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