



DOUBLE TREE BY HILTON GREELEY | GREELEY, CO

Commercial Windows & Doors

Project Profile

DoubleTree Guests Enjoy Soaring Vistas While Shielded from Chinook Winds, Rumbling Trains, Noisy Concerts

The developers and designers of the new DoubleTree by Hilton Greeley at Lincoln Park, which recently opened in downtown Greeley, Colo., faced a few unusual engineering challenges. The city sits on the sunny high plains near the Rocky Mountains, making the hotel a perfect candidate for panoramic windows nearly the same size as the out-facing walls for each of the hotel's 147 rooms.

At the same time, the downtown site is exposed to high levels of urban noise and may experience some of the most punishing winds in the United States.

As such, the windows would have to be engineered with an STC rating high enough to block the noise from next-door Lincoln Park, home to several large festivals each year, and from the nearby Great Western/ Union Pacific rail line where 15,000 to 20,000 railroad cars a year rumble by in long trains announced twice daily by bellowing train horns.

Greeley also sits at the base of the mountains where the Chinook winds pick up energy, generating straight-line gusts up to 50 miles per hour and 20 to 30 "rope" tornados (mini-cyclones) per year, more than anywhere else in the country.

To meet those challenges, designers drew up specs for fixed window structures that would be able to do the job – and do it for decades without having to be replaced. After running building information modeling (BIM) tests on the originally specified aluminum windows versus uPVC, the general contractor chose the more energy-efficient uPVC REHAU System 4500 fixed windows. And REHAU delivered.

The 250 window units were built with highly energy-efficient bronze-foiled uPVC frames achieving a design rating of CW50, or 50 pounds per square foot of wind and water pressure – and an STC rating that would blot out the shriek of a train whistle from just two blocks away.

REHAU's proprietary uPVC materials retain these high-performance qualities for decades, long after aluminum structures would have given way to the corrosion resulting from pounding winds and rains that also bring more than a half dozen driving hail storms a year through the region.

"The windows actually rated higher (for strength and noise) than we needed, but the price was the same," said Kyle Bonde, the lead estimator for Hensley Phelps, the Greeley, Colo.-based general contractor for the hotel project.

The bottom line for the newly opened hotel is that customers are very happy, said Ann Marie Cole, the sales and marketing director for the DoubleTree by Hilton Greeley, which is now booked into 2020. "I talk with customers every day in a number of capacities, including the front desk, and have heard no complaints." That's a bit surprising, she added, because the area can be very loud – and the winds through Greeley are so strong they "rattle glass panes" in homes and other buildings.

The room environments are surprisingly quiet, added the hotel's engineer, Jeff Stull.

"I was just doing routine maintenance in a room the other day when a train went by. I couldn't even hear it. It was amazing."



Project: DoubleTree by Hilton Greeley – Greeley, CO

Type of Construction: Hotel, constructed in 2017

Scope of Project: 250 windows

REHAU Systems Used: System 4500 fixed window