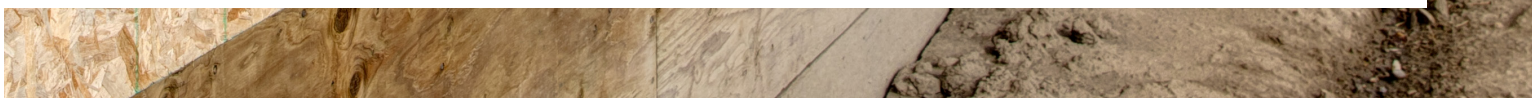
REHAU®
Unlimited Polymer Solutions

BIG ROSE COLONY | SHELBY, MT

Windows & Doors

Project Profile



Big Rose Community Relies on REHAU GENEO® Windows to Conquer Rocky Mountain Weather Extremes

When George Hofer began building the living quarters, school and cafeteria for the Big Rose Colony's new Hutterite community near Montana's Canadian border, the lead carpenter already knew the extraordinary challenge he was about to face.

North central Montana's weather is brutal. "In the winter it can go from 40 degrees above to 40 degrees below zero…just like that," he mused in his light German accent that still lingers from the Hutterite religious community's roots in Germany more than a century ago.

Hofer's solution: To install what he felt were among the world's strongest and most energy-efficient windows and doors. He chose REHAU's newest, advanced polymer GENEO system made of RAU-FIPRO®, a proprietary fiberglass-uPVC composite material.

"They're German," he quipped. "So I know they do a good job. They're highly rated for their strength, and REHAU is known around the world. It is a company I trust."

Big Rose is situated on open plains 100 miles east of the Rocky Mountains and eight miles south of the Canadian border. Hofer, who came from a similar Hutterite community across the Canadian border, knew the territory. "It's not just the cold up here. It's the wind." In Montana's "Big Sky" northern plains, wind speeds top 33 miles an hour 169 days out of the year. In 2002, a Hutterite colony closer to the Rockies was pummeled by 143 mile-per-hour gusts, still a US record for straight-line winds.

"In addition to cold drafts, the wind stirs up clouds of dust that get into everything. The fenestration structures have to be tight, but also open in a way that doesn't trap dust," said Pat Parsons, vice president of operations for Holcomb Windows LLC in Salem, Ore., which worked with Hofer for more than a year to specify and manufacture the REHAU windows and doors.

Hofer and his crew installed more than 200 tilt-turn windows and 30 single outswing entry doors on the colony's new farm buildings. The windows in the school are tilt-turn over fixed, providing ample natural light and views for the students, while allowing teachers to control the ventilation. The doors are divided by a mid-rail, with glass on top and an infill panel on the bottom.

With its innovative combination of material and design, GENEO takes REHAU tilt-turn technology to its highest levels of strength and thermal performance. The fiber-composite material RAU-FIPRO, similar to that used in aircraft and racing cars, makes GENEO windows and doors so strong, rigid and stable that the need for steel reinforcement is greatly reduced. This strength allows the system achieve structural ratings up to CW-PG70. The main profiles are broad enough to seat up to 2-inch-wide, triple glazing with added space to trap air between glass layers, driving thermal efficiency U-values as low as 0.13.

The operable windows either tilt in at the top for ventilation, or turn to swing open completely. When they're locked closed, the GENEO design with REHAU's compression-seal technology and multiple locking points surrounding the sash can withstand enormous wind and rain pressures.

"We knew we had to have something strong, high-quality and durable," Hofer said. "I looked at a lot of windows, and I've had a lot of experience with other types of windows. And I knew the REHAU GENEO system was highly rated for its strength, the type you see in high-rise buildings that have to take a lot of wind."

Hofer is happy with how hard Holcomb Windows and REHAU worked for nearly a year to get it right – and he's impressed with what he's seen so far.

"I'm convinced these windows will outperform any other window on the market," Parsons said.

Project: Big Rose Colony – Shelby, MT
Type of Construction: Living quarters and cafeteria, constructed in 2018
Scope of Project: 200 windows, 30 doors
Manufacturer: Holcomb Windows LLC
REHAU Systems Used: GENEO® windows and doors