



HOMEOWNERS WILL BE DREAMING OF GENE[®] WASCO WINDOWS AND REHAU

Katie and Andy Udell got to live the dream of many when in 2015, they bought a lot in Janesville, Wis., and were able to design and build their own two-story, 1,200-square-foot home. Katie, a landscape architect, had one major goal: make the house as energy-efficient as possible. To that end, the Udells included everything from thick foam insulation to an all-electric Mitsubishi heating and cooling system.

When it came time to decide on the house's windows, they definitely went the innovative route. Their pick? GENE[®] Tilt-Turn windows from REHAU. GENE holds the distinction of being the first fully reinforced polymer window profile system that does not rely on steel for its strength. Instead, it is comprised of RAU-FIPRO[™]. This proprietary glass-fiber composite material is similar to those used in aeronautic construction and race cars for superior strength and load capacities.

David Paulus Jr., REHAU fabricator and owner of WASCO Windows, describes RAU-FIPRO as "significantly stronger and stiffer than normal uPVC. For this reason, unless we are dealing with very large sizes, additional steel reinforcement is not necessary. The chief advantage for the consumer is better thermal performance as the addition of steel increases heat loss. If steel is not necessary, we can fill that chamber with an insulation module, and the end result is 14 percent less heat loss through the frame. As a manufacturer, I also have advantages. I do not need to cut, drill, and install the steel reinforcement. This saves labor. And unlike conventional fiberglass, we weld the RAU-FIPRO frames and sashes exactly like we do uPVC ones. This means neither one of us -- manufacturer and consumer -- has to deal with mechanical joints found in fiberglass windows."

RAU-FIPRO is indeed the best of both worlds: PVC and fiberglass. In the hands of the experienced REHAU window engineers, the unique material was transformed into an extremely strong polymer profile that substantially improves thermal insulation.

Dieter Kronenberg of REHAU pointed out, "RAU-FIPRO with its integrated fiber composites provides enough strength to build at least 90 percent of all residential window sizes without any additional metal reinforcements. This dramatically enhances the overall thermal performance of the window. GENE0 windows made of RAU-FIPRO are welded in the corners, unlike other framing materials such as steel, aluminum, fiberglass, or wood, which tend to encounter cracks over time due to their mechanically joined corners. This ensures long-term air and water tightness of the GENE0 frames."

Katie Udell has been very impressed with the results so far. She and her husband worked with Rolf Jacobson, a passive house consultant who helped the couple decide on the final building envelope and windows. "Windows were very important in our design and decision making process," she stated. "We tried to minimize the size and quantity of windows on the north, east, and west sides of the house and maximized the windows on the south side. We also made sure to have sufficient overhangs on the south windows. Since windows can be a big source of heat loss, we were 'sold' on the triple-pane windows due to their thermal performance compared to traditional double-pane windows. We were able to visit the WASCO Windows & Doors facility, where we learned of the high quality and care they take with building these windows."

GENE0 windows work especially well in cold-weather installations, such as those in Wisconsin and other markets across the Midwest. "As GENE0 windows do not need metal reinforcements and can be outfitted with foam insulation within the chambers instead," Kronenberg noted, "they outperform most other windows in regards to condensation, unpleasant drafts, or cold feelings close to the windows in wintertime. They will keep you warm and cozy."

Paulus agreed. His Milwaukee-headquartered firm has been manufacturing REHAU uPVC designs for over two decades, and the vast majority of the windows he and his colleagues have produced have been installed in Wisconsin. "We are confident enough that we offer an extremely good warranty," he said, "and we have yet to replace a window for failure due to weathering."

For customers who are concerned as much about security as they are about efficiency, GENE0 windows boast features that will also appeal to those users. In combination with the appropriate hardware, GENE0 windows enhance security with multiple locking points, fusion-welded corners, and a multi-chambered design.

Paulus commented, "The European hardware used on the GENE0 windows locks around the entire perimeter of the frame and you cannot even begin to compare it with the typical crank-out casement or worse, hung or slider locks. We go one step further and build to the first additional level of forced entry resistance (WK1). You can even take GENE0 two steps higher in security without using any steel reinforcement."

"Additionally," he continued, "GENE0 windows accommodate insulated-glass units of up to two inches thick without any problem. This means you can use thicker or even laminated glass to resist forced entry, without having to sacrifice thermal performance by using smaller gaps between the panes of glass."

Kronenberg added confidently, "Any intruder will look for easier ways to get into the building than trying to access through our windows." Perhaps best of all, GENE0 windows will convince even the most discerning homeowner from a purely aesthetic standpoint. Simply put . . . they look good. Consumers have a wide array of customized shapes to choose from: round, half-round, triangular, rake-top, and ellipsoidal. They can also choose between classic white, solid colors, or wood grain patterns. In addition, the client can have the same or different colors on the interior and exterior.

Udell concluded, "The windows are the things that visitors to our home comment on the most, and always positively! They were also within our budget and have been easy to clean. We like to consider the design of our house as a modern craftsman style, but we wanted to keep the window design simple and clean. We are really pleased with the results."



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