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[Community centers](#), like our recently completed 8,000 SF assembly building, the **Malcolm Rosenberg Hillel Center for Jewish Life** in Blackburg, Virginia. [CONTACT US](#)

must negotiate a huge range of occupancy demand. In the course of one day a group of four may convene for a small noontime meeting while a group of 300 might gather for dinner and an evening dance. The demand for heating, cooling, and fresh air supply for events like these varies tremendously.

How can we provide for both large and small events quickly and effectively without wasting energy on unnecessary capacity the rest of the day? Until recent advances in building science, there wasn't a good answer. But with [Passivhaus](#) (aka "Passive House") expertise, we can design and optimize a building's envelope, solar design, mechanical systems and occupancy sensors with the pinpoint accuracy necessary to meet the demands of community centers like Hillel and deliver revolutionary gains in energy efficiency and building performance.



At the Hillel Center we employed an airtight Passivhaus building envelope with superinsulation, high performance windows and doors, and super-efficient energy recovery ventilators (ERVs) for a constant supply of fresh air. These measures decreased heating and cooling demand so much that we eliminated conventional (and expensive) mechanical systems and replaced them with smaller, more efficient equipment. **The cost savings allowed us to build the project at just \$135/SF, comparable to conventional construction.**

A system of carbon dioxide sensors monitors occupancy demand and automatically ramps up fresh air and cooling supply for larger events. A central, variable speed ERV delivers 200 to 2000 cfm of airflow to the building, while an additional system of ERVs provides additional airflow capacity for the center's multipurpose area for its largest gatherings. A passive thermal ground loop boosts energy efficiency by preconditioning fresh air as it enters the ERVs.

Thanks to the [integrated delivery of Passivhaus design and construction](#), the Hillel building provides unparalleled comfort, low operational costs, and tremendous flexibility at no added construction expense.

Hillel also integrates the world's first commercial kitchen hood within a Passivhaus building, successfully handling inherently large air changes while still meeting Passivhaus' stringent energy and airtightness requirements.

Through projects like this, Passiv Science has established itself as the US industry leader in large scale high performance design and construction.

Project Stats

Location: Blackburg, Virginia

Size: 8,000 sq. ft.

Project Highlights:

First US Passivhaus Mixed Use Assembly Building
PHIUS Certified
First Project in the World to Include Commercial
Kitchen Exhaust Hood in the Passivhaus Envelope.

Energy Use:

65% Below Code (predicted)

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