

DESIGNING EFFICIENT HOMES

According to the Solar Energy Industries Association, the U.S. solar industry grew 34 percent in 2014. Unfortunately, says Jon Gardzelewski, assistant lecturer in the Department of Civil and Architectural Engineering, solar panels are often an afterthought.

“We’ve seen so many examples of solar or net-zero houses where someone has taken a house that wasn’t really designed to fit the site or the climate, and then they throw on solar panels and call it a ‘green’ house,” he says. “Being architects and having a really serious appreciation for aesthetics, we are out to prove that if you’re considering solar panels and making your home a showcase zero-energy house, the home should celebrate that.”

Enter BERG—UW’s Building Energy Research Group. “We’d been approached by people around the state to look at ways they could save energy in their buildings,” says Gardzelewski, who heads the group. “That was a serious motivation for forming this group—we could tackle big projects, be organized and have access to more resources.”

The group also set about producing a catalog of Net-Zero Energy Homes for Wyoming. “The goal is to create home designs that can meet just about every need that we think people in Wyoming will have,” he says. “Our goal is to give the designs away, and then people can modify them to fit their lot and meet their needs.”

“We developed a few models and started presenting them to builders, real estate people, solar people—everyone in the industry—to get feedback,” Gardzelewski says. “The designs are continually being revised to really try to get a perfect set of home plans for people in Wyoming that are going to be zero-energy, that are going to be affordable and that are architecturally competitive.”

While this is relatively uncharted territory in Wyoming, Gardzelewski says homes in Colorado with “green” features go for an added premium, and he believes this will be even more true

Assistant Lecturer Jon Gardzelewski heads up UW’s Building Energy Research Group, which has created a catalog of Net-Zero Energy Homes for Wyoming.



when the homes are carefully designed to showcase these aspects and fit their environment.

In addition to the catalog, Gardzelewski and his colleagues help Wyoming residents and builders with projects on a regular basis and hope to strengthen outreach going forward. “Oftentimes through class or independent projects, we’ll set up a student with someone who has approached us,” he says. “They’ll work with the person and give them lots of design options. We teach our students how to use computer modeling and building information modeling, so people can get a really good visualization and understanding of a design.”

“For people who have building needs, we are really excited to talk to them,” Gardzelewski says. “We’ll never compete with local professionals, but we recognize we can help with a lot of this detailed simulation work that local professionals just aren’t yet doing. We’re hoping to make stronger connections with the design teams in the state too.”

From Wyoming’s youngest population to its oldest, from medicine to education and architecture, UW’s professors make a difference every day in every corner of the state.