

# Net-zero renos aren't easy: expert

*Developer plans to make  
1960s house green powerhouse*

BY KEVIN MA  
Staff Writer

Albertans can transform their houses into net-zero homes using current technology, says a local homebuilder, but it isn't easy.

About 160 Edmonton and St. Albert residents packed the CN Conference Theatre at Grant MacEwan University Wednesday night for a talk by Peter Amerongen of Habitat Studio & Workshop. Amerongen has built about five net-zero homes in the Edmonton region.

It's now relatively simple to build a new home that's net-zero, Amerongen said, meaning that it produces as much energy as it uses during a year.

It's much more difficult, and expensive, to do a net-zero renovation. "You're dealing with something that's already there. Things have to be torn apart."

He was unaware of anyone in Canada that had managed to do one.

The Dublenko family in Edmonton asked him to give it a shot. He's yet to start the renovation or cost it out, but his initial modelling suggests that the Dublenkos could eliminate up to 99 per cent of their home's energy use using solar panels and insulation.

"It's a little disheartening," he said of not hitting net-zero, but it still represents a massive cut to the home's carbon footprint.

"That's what we have to do to continue our comfy lifestyle on this planet."

## Challenging project

Net-zero retrofits are very rare, said Leigh Bond of St. Albert's Threshold Energies Corp. "It's not that it's not technically possible. It's that it costs money."

Most modern homes are just 61 per cent efficient and have hundreds of tiny, hard-to-fix leaks from the screws and nails used to build them.

But about 85 per cent of the homes we'll be heating in 2050 are already built, Amerongen said — if we want to fend off climate change, we have to renovate them and reduce their energy consumption.

An energy audit of the Dublenko home showed that it used about 40,000 kilowatt-hours of energy a year, Amerongen said. The 1,200 sq.-ft., I-shaped 1960s-era bungalow had no south-facing windows and little wall insulation. "There's lots of room for improvement."

Step one is conservation. "There's really no reason why sav-

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Carbon Busters

ing energy is any better than collecting it," Amerongen said. That means high-efficiency appliances and lights, as well as consumption monitors and on-demand water heaters.

Next comes insulation. By adding a layer of insulation to the outside, Amerongen proposed to double and quadruple the heat-retention value of the home's roof and walls, cutting the home's energy use in half.

The rest of the energy would have to come from renewable sources. Even with \$60,000 worth of solar panels, the home still falls at least 300 kilowatt-hours short of net-zero.

## Pricey project

This would not be a cheap project, Amerongen said, and it will be up to the Dublenkos to decide how far they want to go with it. "It's not something you'd do because you're interested in the payback."

Carbon Busters recently did a similar analysis of a 1950s-era home, said company president Godo Stoyke, and found it could make that home zero-carbon for about \$30,000. "It's so expensive that renewable [energy] starts to look attractive."

You don't have to spend big to save carbon and energy, Stoyke noted.

For about \$53 a year, for example, you can buy renewable electricity and cut about four tonnes from your home's annual emissions — equivalent to about 1,700 litres of gasoline.

If you're looking for financing, CIBC and TD Canada Trust both offer "green mortgages" for energy-efficient renovations.

You'd need a perfect site to make an old home net-zero, Amerongen said, but you can still get darn close without one. Start with conservation, he suggests, and then move on to insulation.

"If you're thinking about upgrading your windows, hold off until you can do the walls at the same time."

Amerongen's presentation will soon be available at [solaralberta.ca](http://solaralberta.ca).

[kma@stalbert.greatwest.ca](mailto:kma@stalbert.greatwest.ca)