

RESTYLE YOUR HOME

BEFORE



AFTER



NICK KOZAK FOR THE TORONTO STAR

During the renovation, the home was stripped down to its brick and floor joists, then rebuilt. Bricks were removed to allow for more natural light and exterior walls were fully insulated.

Seeking a national standard for retrofits

SUSTAINABLE from M1

“What is sustainability? What is the metric you use to rate it? And how far do we go? What’s the balancing point? That’s the thought process I’m trying to get into,” he says. “I’m trying to come up with a set of parameters so we can at least start having that discussion.”

The home renovation study has been dubbed Renovation 2050.

“The house is supposed to represent where we want to be, at a minimum, by 2050, in terms of how people should be renovating existing homes,” says Richman, adding that in hindsight he should have called the project 2020.

“I want to be further ahead, given climate change and what we’re facing coming down the pike,” he says.

His research team is evaluating the home’s sustainability by measuring its performance in several key areas: energy efficiency, health and comfort, durability and moisture man-

agement, indoor air quality, and building material choices.

Work began in early 2010.

The renovation cost \$310,000, which was slightly over budget, Richman says, but none of the funding for the study was used to cover construction costs — he and his wife paid for the renovation.

The century-old Riverdale house had been plagued by poor insulation, structural flaws and water damage. “It was uninhabitable,” Richman says.

He and his crew stripped it down to the brick and floor joists. “You could stand at the front door and fall to the basement or look up to the underside of the roof,” he recalls.

Portions of the brick on the southern side of the building were removed to allow for more windows and natural light. Earth was excavated from below the basement slab — a technique known as underpinning — increasing the height of the home’s lower level from six feet to eight.

The home’s exterior walls were fully insulat-

ed and radiant flooring was installed, as was an energy recovery ventilation system, which uses inside air to warm incoming outside air, providing a constant supply of fresh air while keeping heating costs in check.

Richman was project manager on the renovation, but he wasn’t just barking orders; he did about half the construction work himself. “I grew up holding a hammer,” he says, noting that he’s carried out similar gutting and renovation projects on three other homes before.

RICHMAN’S ISN’T the only green home project involving Ryerson talent.

A team led by Ryerson engineering students is currently studying Heathwood Homes’ Green Home (heathwoodgreen.ca), a 4,400-square-foot eco-house located in the company’s high-end Richmond Hill community, the Reserve.

Researchers are examining the home’s electricity, natural gas, and water consumption, and doing a cost-benefit analysis to evaluate the effectiveness of its energy and water con-

servation features, such as roof-mounted photovoltaic solar panels and a grey-water recovery system, which reuses bath/shower water for flushing toilets.

Both green home projects aim to help the building industry get closer to understanding how to make homes truly sustainable.

Ultimately, Richman hopes his research will help convince lawmakers of the need for a national standard for rating the energy efficiency of residential retrofits and renovations, akin to Germany’s rigorous *passivhaus* standard.

“I think one of the only ways to get things kick-started is through legislation,” says Richman, noting that he’s pleased with recent changes to the Ontario building code that mandate increased energy efficiency in new construction.

“My role as a researcher is to provide data that strengthens the case that we should be going even further with this,” he says.

For more information, visit ryerson.ca/richman. For more before-and-after pictures, go to yourhome.ca.

Symmetry not a virtue for this type of fence

FENCE from M1

Expect to pay anywhere between two and five dollars each. But you should be able to negotiate, especially if you’re buying more than, say, 50. Keep in mind, too, especially while haggling, that unless you’re penning a wildebeest, the difference in the quality of rails is negligible.

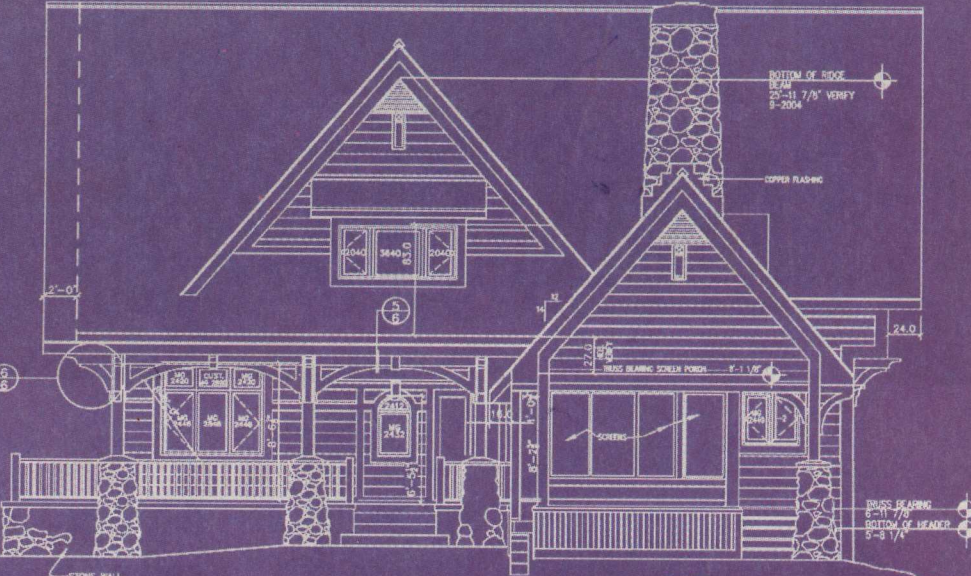
Because they’re cedar, they’re virtually impervious to rot, regardless of their age or how they’ve been stored.

So don’t fret if you’re culling from a huge pile that’s been exposed to the elements since long before Hazel McCallion’s first campaign speech. In fact, the older the better; you’ll want that consistent dark grey look.

There are more than a few styles of rail fences, too, some more time-consuming to construct than others, but none really insurmountable.



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