

POST HOMES

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CONDOS

FINANCE FIASCO

How can directors
not do a reserve
fund study?

PH6

DECOR

COSY COTTAGE

An Elvis-like
cabin can become
a lovable lair.

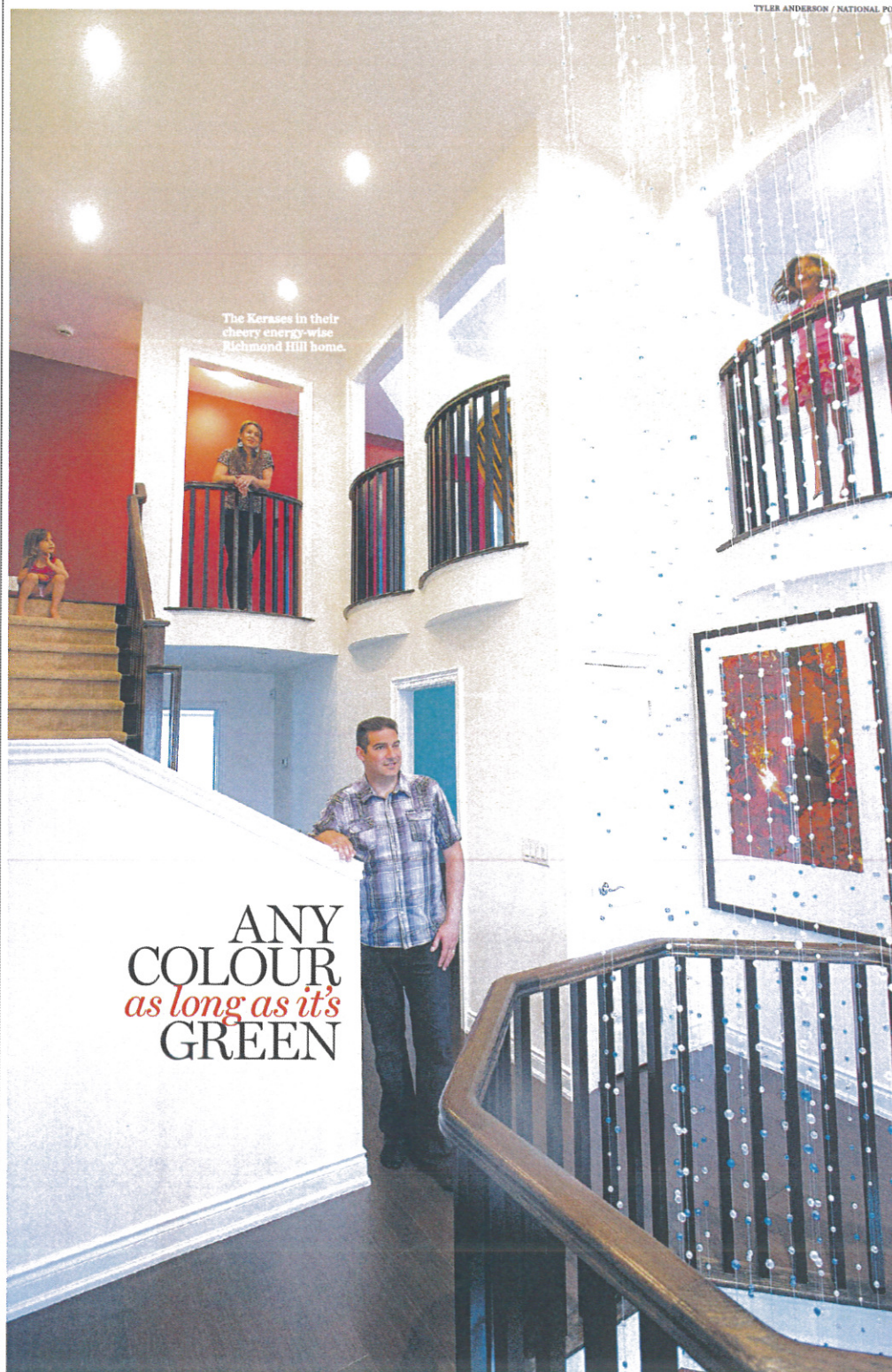
PH6

DESIGN

SEATS, PLEASE

How a chair is
as big a challenge
as a skyscraper.

PH8



The Kerases in their
cheery energy-wise
Richmond Hill home.

ANY COLOUR *as long as it's* GREEN

The Kerases were guinea pigs for a builder looking to create real eco-wise living *By Jack Kohane*

Nick and Danijela Keras just might make the neighbourhood green with envy. Their new home comes complete with 100 cutting-edge features designed to save energy and cut maintenance.

"Our house has all the eco-friendly bells and whistles," says Mr. Keras, a financial analyst with a major bank. "We couldn't pass up this opportunity." In mid-2012, the couple purchased a model home in The Reserve, Heathwood Homes' high-end Richmond Hill community on Coons Road, when it came up for sale. The 4,300-square-foot house was showcased as a green demonstration house.

Dubbed the Green Home, the Keras home could show the way forward for environmentally conscious buildings of the future. The four-bedroom house features energy-efficient elements, including a grey-water reuse system, tankless water heater and low-flow shower heads. The roughed-in solar photovoltaic panels allows for the option to install solar heating at any time (any solar power generated would be put back into the grid to offset peak demand and to lessen reliance on fossil-fuel power).

To reduce the home's carbon footprint, Heathwood included low-emission argon-filled windows

to reduce heat loss, energy-efficient lighting, more-than-98% efficiency natural gas heating and air conditioning systems, and a heat recovery ventilator that brings in fresh air to the home for enhanced indoor air quality.

Bob Finnigan, Heathwood's COO of housing, sees the Green Home as an opportunity to promote improved efficiency standards and demonstrate how beneficial they can be. "This project reflects our continuing commitment to embrace sustainable-building practices," he says from his Toronto office.

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“If a fuel-efficient car is driven stop and go, its systems won't perform the way they're designed to. In a home, all the sophisticated technology won't help if the A/C is on full tilt during the heat of the summer while the windows are open — *Bob Finnigan, Heathwood Homes*

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SAVINGS DOWN to a SCIENCE

ENERGY

Continued from Page PH1

Two thermostats control the Green Home's inner environment. The first thermostat runs the air conditioning and furnace for the basement and main floor; the second runs the second A/C and second furnace for the second and third floors. They are automatically controlled by programming the first thermostat to run heat or cold during the day while the family occupies the main floor or basement; the second thermostat delivers heating or cooling at night while the family sleeps in the second- and third-floor bedrooms. "This way the entire home is not being heated, just the floors being occupied during the appropriate time of day," Mr. Keras says.

To demonstrate that green tech-

nology innovations can work in real life, Mr. Finnigan commissioned Ryerson University's Mechanical and Industrial Engineering Department to conduct a long-term study to monitor and compare the results of two test homes for energy consumption and efficiency.

The study first involved simulating the energy use of both an Energy Star home (located in Heathwood's nearby Forestbrook development) and the Green Home. The homes had the same floor plan, exterior coverings and interior finished space.

Then, the students did a survey of both occupant families to identify differences in lifestyle and human behaviour, covering how many hours each person spends in the house and whether others (such as nannies) live there during day; how often they use heating system during the winter and what temperature they keep

their home at; the temperature and usage during the cooling season; water usage and how many times a week they bathe and shower; the number of cooked meals and how many hours the stove and oven were used per week; the average use of electrical/entertainment devices per day; and lighting.

Among the Ryerson study's main findings: Energy use for the Green Home measured over the 18 months was 21% higher than the Energy Star Home. The difference stemmed from the fact that five people (including two children and a nanny) live in the Green Home, each spending 120 hours per week there. Only four people live in the Energy Star home, each spending 70 hours per week there. In addition, the occupants of the Green House typically maintained their home during the heating seasons at 23°C, while those in

the Energy Star house kept the temperature at 21°C.

Making the study's biggest splash was water use — it was significantly lower in the Green Home (319,000 litres versus 354,850 litres in the Energy Star home) despite the higher occupancy in the Green Home. This provides an encouraging sign for incorporating water-saving features and the grey-water reuse systems in particular.

Mr. Finnigan says energy-use patterns depend on the lifestyle of the occupants. He likens it to operating a fuel-efficient car. "If the car is being driven [stop and go], its systems won't perform the way they're designed [to perform]," he says. "In a home, all the sophisticated technology won't help if the A/C is on full tilt during the heat of the summer while the windows are wide open. The consumer has to be educated on how

these systems work and what they can do for them."

From experience, the Kerases know their new home is a money saver. Mr. Keras has done his own informal energy-cost comparisons between the Green Home and his previous property — a detached, 2,350-sq.-ft. home in Woodbridge. A stack of utility bills amassed over years reveal that despite the Green Home being almost double the size, at 4,300 sq. ft., his family uses about 39% less natural gas to heat it, about 5% less electricity to cool and light it, and 15% less water for showers and toilets.

"We feel lucky to have bought this house," Ms. Keras says. "Saving on energy costs over time gives us options to either earmark our budget for more vacations down the road or pay down the mortgage. It's a great investment."

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The Kerases use 39% less natural gas, 5% less electricity and 15% less water in their new, larger home.