

INNOVATION

# Designing for the future

Recycling greywater ‘future-proofs’ homes, making them energy-efficient. Geranium is the first Ontario home builder bringing it to the masses

Using recycled shower water to flush toilets is one significant step towards “future-proofing” new homes says Geranium Corporation housing division president Boaz Feiner.

Every time you flush the toilet, it’s like 6 to 10 cups of drinking water are being flushed down the drain,” he points out. “Fresh drinking water is precious and it’s time to think about our relationship with this scarce resource. A household system that re-uses and recycles greywater makes a lot of sense.”

As part of Geranium’s commitment to innovation, 18 homes at its Copperstone community in Ballantrae, in the town of Whitchurch-Stouffville, north of Toronto, will be built to accommodate a greywater recycling system. This uses daily shower and bath water to flush toilets. The system could result in a savings of 30 per cent in household water consumption — or hundreds of dollars a year, depending on the number of residents.

“That’s very substantial,” notes Feiner. “Technology is changing so quickly,” he continues, “and we want to be a leader in our business, rather than playing catch-up.”

“Future-proofing” homes with state-of-the-art technologies, like smart wiring, solar-panel rough-ins and high-performance insulation will make homes energy-efficient and better prepared to meet the future demands of its homeowners.

Geranium is poised to be a leader in the greywater recycling field, the first Ontario residential builder to introduce such a system at a large-scale development.

While greywater systems are becoming common in commercial development, in the residential market they’ve mostly been found in high-end custom-built “green homes.” A system for use in the wider resi-



Geranium’s Boaz Feiner, left, provides water-saving opportunity to future residents.

dential market is currently under development by Greyter Water Systems Inc., a Mississauga-based company that sells industrial-grade greywater recycling systems for commercial use around the world, including Canada and the U.S. Among Greyter’s current project partners are the U.S. Army, Canada’s Department of National Defence and the Ontario Ministry of Education.

Geranium’s Copperstone development — which qualifies as an Energy Star for New Homes neighbourhood — will be a pilot

project for Greyter’s residential greywater recycling system.

The first step will be the installation of plumbing in the homes at Copperstone to accommodate the system. The main shower and bath drains will be connected, so the greywater — defined as wastewater from washbasins, showers and baths — will run down to the system’s holding tank. From this tank, supply lines will connect to the toilets, providing recycled greywater to be used for flushing. All the required plumbing will be in place whenever Greyter’s system is approved

## COPPERSTONE

This cul-de-sac community of 18 manor homes — located in Ballantrae, in the town of Whitchurch-Stouffville, about 60 km north of Toronto — is Geranium’s newest Energy Star for New Homes neighbourhood. Each lot is approximately half an acre. Bungalows range in size from 2,990 to 3,732 sq. ft., and two-storey homes from 3,164 to 5,058 square feet. Prices start from \$1.1 million. These homes are close to schools, golf courses and equestrian centres.

Drop by the presentation centre at Forest Trail Estates (on the west side of Hwy. 48, south of Aurora Rd.). For more information and hours of operation, phone **905-642-1900** or visit **geraniumhomes.com**.

for production, likely within a year or so, according to John Bell, the company’s vice-president of business development.

“The prototype is built and in my home and working beautifully,” Bell reports. A greywater recycling system can save the average household a considerable amount on their water bill, Bell notes. “If you’re a family of four to six, you can save — based on today’s 6-litre toilets — 60,000 to 90,000 litres of water a year.”

That’s almost \$250 to \$300 a year, he says. “And the cost of water is expected to go up every year,” he adds, “so there’s a significant savings opportunity here.”

The way Feiner sees it, the inclusion of the plumbing for a future greywater recycling system at Copperstone underscores the obvious advantage of buying a brand-new home.

“We feel it is our responsibility to take the first step to saving water on behalf of the future Copperstone homeowners. And we’ll encourage them to take the next by having a completed system installed,” says Feiner.



Brockport Homes’ pre-made panels are used for walls, floors and roofs that be can constructed in weeks rather than months.

## UPTOWNES

This enclave of 134 homes will be built in phases. Home purchasers can choose between the Chicago Series of back-to-back townhomes and The Gooderham Series of stacked units. Unit sizes range from 1,401 to 1,639 sq. ft. The large rooftop terraces range in size from 279 to 380 sq. ft.

Drop by the sales centre on Millard St. (east of Hwy. 48 and north of Stouffville Rd). For more information and hours of operation, phone **905-640-9999** or visit **geraniumhomes.com**.

have better fit and finish,” says Wilson. “Materials like ceramic tile, cabinetry and trim work will be straighter and more square.”

Manufactured panels also don’t generate much waste. “We reclaim and recapture all the waste at the factory,” Wilson explains.

From the method used to install pre-made panels, which results in minimal waste on the construction site itself to reduced fossil-fuel consumption in transporting labour and materials, Wilson says that there are many efficiencies and benefits to the builder, the end-owner and the environment.

Panel systems typically require more upfront investment than conventional construction; however, these costs are offset by downstream benefits, according to Wilson.

“The improvement you get in efficiency, speed, accuracy and precision — all that goes together to more than outweigh any extra hard dollar costs.”

Besides, Wilson adds, as the use of panels becomes more commonplace, their cost will approach that of conventional construction.

Geranium will pay careful attention to how the use of manufactured panels pan out at Uptownes.

The company is planning to use a similar system at its master-planned resort development, Friday Harbour, on Lake Simcoe in Innisfil, an area, Morizio points, out that’s known for its winter weather.

“Whichever company we choose to partner with at Uptownes, their knowledge and experience will be invaluable to us.

“I foresee this building project going smoothly and look forward to using panels wherever possible in future communities,” Morizio says.

“It makes sense for us and for the homeowners who will benefit from our ability to have increased accuracy in our construction timelines and even fewer after-sales-service items.”

# Precision panelling

Pre-made floor and wall panel systems quicker to put up than stick frames

Winter is fast approaching, and Louie Morizio, vice president of construction at Geranium Homes, is pleased that Uptownes in Stouffville is his next project. That’s because Uptownes, the latest phase of The Neighbourhoods of Cardinal Point Geranium’s master-planned ravine community, can be built quickly using factory-made panels.

Each block of townhomes in the Uptownes enclave community will be constructed with panels manufactured in a controlled environment. These components, which are designed to accommodate the homes’ plumbing, ventilation and electrical systems, will be delivered

to the site and lifted into place with a boom truck, with assistance from a small crew. This will comprise the complete shell of a home in a fraction of the time it would take to build a conventional stick-frame structure.

“With our winters, taking the weather factor out of the equation means we can be more accurate with our timeframe,” says Morizio. “Now, instead of it taking two months to put up a block of townhomes, we can do it in approximately two weeks.”

## New way of building

Using pre-made manufactured panels is another example of how Geranium is embracing innovation to solidify its position as a leader in the home-building industry in the GTA.

“This is the way of the future,” says Morizio. He’s referring to wall, floor and roof panels as representing the next stage in home-construction evolution, from man-made on-site to prefabricated. It’s a shift that

began with trussed roofs, expanded into engineered floor-joist systems and is now culminating in factory-made floor and wall panels. “You can’t bury your head in the sand,” he says. “Change is coming, whether you like it or not, and you either embrace it or you fall behind.”

The first block of Uptownes townhomes at Cardinal Point will be constructed entirely with panels, including the walls, floors and roof. The computer-controlled system used to fabricate panels improves efficiency and minimizes errors in the construction process. “We’re bringing the level of precision you would expect from the automotive or electronics industry into the world of home-building,” notes Richard Wilson, president of Brockport Home Systems.

His Etobicoke-based construction company is one of the manufacturers in current discussions with Geranium to build panels for Uptownes. “Houses that use our panels