

Water, water everywhere a problem for Toronto builders

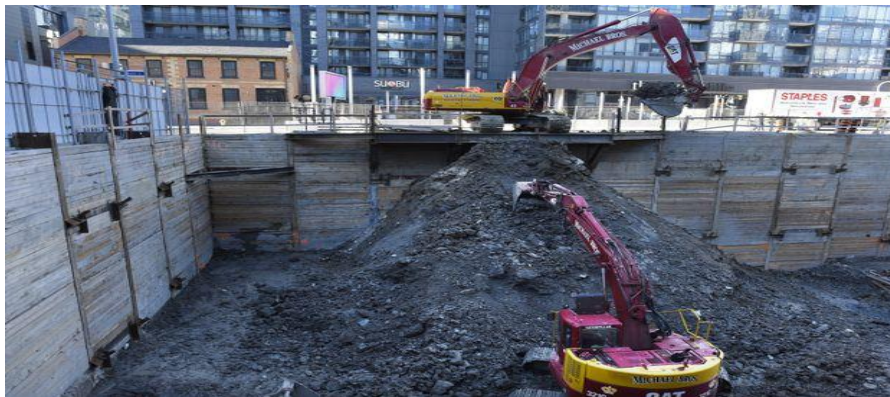
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Many of the forces that can delay or increase the costs of new construction in Toronto are well known – planning approvals, rising material and labour costs, public opposition, financial struggles – but there’s another problem that has been bubbling up for a few years now: water.

Buildings – particularly big complexes that extend large parking structures dozens of feet underground – collect water, from groundwater seepage or from rain during construction. Up until 2016, it was common to create drainage systems that would direct all that water into tanks or cisterns that would often empty into storm sewers.



Two excavator work in tandem to remove soil from a John St. condominium construction site on Dec 6, 2017.

Fred Lum/The Globe and Mail

“At some point, Toronto Water realized they were actually receiving quite a bit of water into their storm-sewer – more than they were anticipating over the years,” said **Paul De Berardis, an engineer and director of building science and innovation at the Residential Construction Council of Ontario (RESCON)**. The city began to study the issue in 2013, and in 2015 recommended that new construction attempt to divert as much water as possible away from the storm system.

In 2016, tough new amendments to sewer bylaws were passed by Toronto City Council that defined pretty much any water coming from a building (whether groundwater that was invading a property, rain or whatever the source) would be defined as “private water” that would have to

be metered. In addition, a discharge agreement would need to be signed to ensure the water discharge would meet strict purity requirements and that the owners would pay for proper disposal.

Right away, the building industry voiced its concerns. RESCON president Richard Lyall penned a letter to council. “We view this as a big change,” he wrote, and asked for a phased-in approach that would allow existing sites to continue their planning approvals with the old system. That would mean continuing to pump untested groundwater and collected rainwater from the sites into the storm sewer system. Council largely ignored these objections.

“It creates an immense amount of delay and expense ... but you know, we’re all starting to realize this is the new sheriff in town,” said Mark Reeve, partner and principal with developer Urban Capital, who says his company had particular trouble at its Ravine project, a 13-acre site at 1215 York Mills Rd. “In the case of The Ravine project, we have a water filtration plant on site. It’s removing what is largely natural elements in the ground water like manganese and suspended solids. So we’re treating the ground water and going into the storm sewer and into the river. The irony of this for us is that we’re actually being forced to take groundwater and turn it into basically pristine drinking water and discharge it into a river that’s filthy.”



Rendering of the Ravine Condos, 1215 York Mills Road, Toronto.

Urban Capital

Since 2016, the number of new discharge agreements has risen quickly; by the end of that year, the city had 263 short- and long-term water discharge agreements in place. In 2017, the first full year of the new rules, that number rose to 312 and city staff said that by the end of 2018 the number had surged to 429, a 63 per cent increase over 2016. Initially, the city set the cost for this private metered water dumping at \$2.17 for each cubic metre, and collected \$2.9-million from sanitary agreements in 2016. In 2017, the city collected \$4.233-million in fees and as of 2018 that figure has risen to \$6.5-million – more than double the total prior to 2016. These dollar amounts are minuscule when compared with Toronto Water’s billion-dollar budget, but these are

costs many developers weren't paying before. Also, in 2019, City Council approved a rise in the water charge, to \$2.254 from \$2.17 a cubic litre.

But in some areas of the city, there's such a lack of sewer capacity that a metering deal won't work.

While stormwater (for surface runoff) and sanitary water (from household and business plumbing) are treated differently by the city, in of the old city of Toronto – where much of the large-scale condo construction has happened in the past 15 years – the pipes for the two systems combine, so millions of litres of stormwater ends up taking capacity from the sanitation system. There are dozens of locations where in heavy rain that combined flow dumps out into creeks and Lake Ontario, a noxious stew of human waste, rain and groundwater.

“The city will tell you early on if they can take that kind of water in the sanitary system, or they can't,” Mr. De Berardis said. “More often than not, the city is saying we're not going to take that water in the sanitary system. They want to preserve that capacity.”



Argento Condominium, 18 Graydon Hall Drive near Don Mills and York Mills.

Tridel

At 18 Graydon Hall Dr. near Don Mills and York Mills, Tridel's Argento project faced years of delays in closing and registering in part because, just as the company was largely finished construction, the new rules came in. According to Harry Herskowitz – partner in DelZotto, Zorzi LLP who has acted as counsel for Tridel (as well as being the former chairman of board at the new home warranty corporation Tarion) – the developer punctured an underground aquifer during construction, unleashing a torrent of water from the site. The costs of metering that gusher, according to Mr. Herskowitz, would have reached “hundreds of thousands of dollars each year – that's how much groundwater there was.”

Residents were unable to take full ownership of their completed condo apartments for almost two years (closing finally happened in November, 2018) as Tridel figured out how to resolve the water problem. Ultimately, Tridel and the city agreed on a filtration and pipe system that would empty treated water into the nearby Don River.

Filtering may be the only option at times, but it, too, carries risks, according to Mr. De Berardis. These water treatment facilities are costly to set up, costly to run and the city will inspect the water standards indefinitely. If the system fails, the permit can be pulled, forcing a building to dispose of its onsite water through alternative means such as trucking water to an off-site treatment facility. Some sites could need multiple trucks a day to remove water, at between \$800 and \$1,000 a truck, he said.

And the city is stepping up enforcement of its rules. In 2017, 69 companies were prosecuted for sewers and water supply bylaw infractions, resulting in 36 convictions and \$348,500 in fines. Of those convictions, six were construction or property development companies working on condominium sites with improper dewatering setups. In many of those cases, the parties entered into a water discharge agreement.

Now, the city is urging developers to build their sites with waterproof “bathtubs,” so that no extra groundwater is collected or flushed down the sewers.

“Bathtub construction is something that’s well understood, it’s just it seems simpler than it actually is. If you could imagine a five- or six-storey underground parking garage; depending on where the site is, there could be a lot of hydrostatic pressure acting on the building,” Mr. De Berardis says. “The city wanted the builder to guarantee the watertight performance of the building, indefinitely into the future, and there were no manufacturers of waterproofing systems who have a warranty or any type of certainty who could back that up.” Plus, bathtubbing adds between \$10-million and \$15-million in construction costs upfront, he said.

In response to questions, the city sent e-mailed responses from William Fernandes, director of Toronto Water: “Staff are starting to see more watertight structure construction both in Toronto and in other municipalities – built both with and without back-up systems for drainage. ... Developers may also give consideration at the start of the project, during the development stage, to reduce the amount of underground parking in areas where the water table is known to be high.”

According to Mr. De Berardis, developers are exploring parking options but run into other planning department needs such as parking minimums for development and mandates to hide unsightly parking structures.

“Why are we forcing below-grade parking?” he asks. “We could build above-grade parking, which would alleviate all these groundwater issues. If you’re not punching 60-70 feet underground, you’re not going to hit water.”