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"Honestly, there's enough industrial land on the waterfront that actually needs to be revitalized that would suggest you don't invest in creating more land at this point," he said. "We certainly don't have any additional funding to create additional land area."

ABSTRACT

On the left, layers of coal, rock and soil sifted out by a soil recycling facility in the Port Lands, ready to be deployed as fill for shiny new condo towers. At one point the central waterfront was the city's dumping ground - if you had a dead horse, you'd take it out there in the winter and leave it on the ice for the spring to come," said Michael Moir, former archivist for the Toronto Harbour Commission (now known as the Toronto Port Authority) and current archivist at York University.

FULL TEXT

David Kusturin motions excitedly to two tubes full of dirt in the tony downtown offices of Waterfront Toronto.

They represent the past and future of the waterfront lands, side by side.

On the right, a core sample containing deep brown husks of long-abandoned dreams of industrial prosperity.

On the left, layers of coal, rock and soil sifted out by a soil recycling facility in the Port Lands, ready to be deployed as fill for shiny new condo towers.

"Potentially across the waterfront there could be up to two million cubic metres of material excavated over the next 20 years," says Kusturin, the chief operating officer of Waterfront Toronto, after explaining how the soil plant separates good material from bad.

"They then clean it and they can sell the product for use in backfill, for roads or for parks or the like."
Toronto's waterfront as we know it today is the result of successive plans involving geological engineering. It started with private industries simply making land sporadically, when there was none to grab. It was completed with a grand design known as the Waterfront Plan of 1912, which is responsible for the shape of the modern shoreline, now well south of the old one at Front St.

The land is layered with old infrastructure, covered with upwards of 10 metres of dirt that was dredged from the bottom of Lake Ontario and spewed over the top of disused wharfs, abandoned ships and industrial refuse.

Building on the Toronto waterfront presents unique challenges, says Kusturin, including a high water table, contaminants from the area's industrial past and occasional surprises, like the wharf discovered in June at 90 Harbour St., the site of a new condominium building.

"There are stories that when construction occurs on the waterfront, that people find all sorts of things, like the hulks of old vessels and bottles. At one point the central waterfront was the city's dumping ground - if you had a dead horse, you'd take it out there in the winter and leave it on the ice for the spring to come," said Michael Moir, former archivist for the Toronto Harbour Commission (now known as the Toronto Port Authority) and current archivist at York University.

The long-buried wharves, while interesting finds, have minimal historical value. The one discovered at 90 Harbour St. was removed indelicately by a crew using a large claw excavator shortly after its discovery.

"What they want to do is, for historical purposes, when they expose them - when they're excavated - they want to photograph them, survey them, understand what they were; then they'll remove them," said Kusturin.

"They're history, but they're not historical, if you know what I mean."

Some of the wood retrieved from those old wharves has remained usable. Hemlock from Queens Wharf, unearthed from the foot of Bathurst St., has been turned into furniture by Ottawa-based furniture-maker NaCoille Studio. Timbers from another wharf were used in the lobby of Corus Quay, the new waterfront offices of Corus Entertainment.

Both soil contamination and stability issues wreak havoc on traditional construction plans, increasing the already-high cost of waterfront development. The cost of building a parking garage near the water can be more than triple what it costs inland, Kusturin said.

Around the start of the 20th century, efforts at creating land here were motivated by a desire to turn Toronto into a major shipping port. The modern effort is an attempt to turn the lakeshore into a mixed-use "destination."

"You'd be surprised how many cities are actually reclaiming their waterfronts. They were always industrial," said Kusturin, who works for the agency charged with revitalizing the city's waterfront yet again.

"Cities are reclaiming those for residential because people want to live at the water."

The modern challenge

Today's waterfront looks different than the industrial port of the early 20th century, but is similarly fuelled by ambition. Now, rather than a waterfront industrial powerhouse, the dream is a vibrant, mixed-use strip, shaped in
part by the idyllic vision of Chicago's remade Lake Michigan waterfront.

Developers have dug into the landfill at great cost to build towers that stretch skyward. Each requires a special effort to remediate the soil and drill down to bedrock, its foundations secured either directly, through layers of parking garage, or with supports.

"(The landfill) makes it more expensive, there’s no question about that," said Kusturin, an architect by trade.

"To build an underground parking stall in the waterfront probably (costs) in the order of $100,000 a stall, as opposed to if you were doing it anywhere else in the city and you weren't dealing with contaminated material, (where) you could be looking at $30,000 per spot."

Even installing sewers requires extra effort because the soil is so soft. First, crews must excavate underneath the pipe and put in a layer of rock, followed by a sandwich of specially designed geotextiles to form a supportive hammock under the pipe.

"The bearing capacity of the soil is so bad that (pipes) would just sink, probably right into the rock, if the engineers didn't come up with engineered soil systems," said Kusturin.

Surprises like the recently discovered wharf also place a burden on construction. The rapid development of Toronto's waterfront in the late 20th century dredged up countless artifacts from before the lake was filled.

Construction of what's now known as the Rogers Centre in 1987 turned up a 200-year-old French cannon. The 2.7-metre-long tube probably arrived as ballast for a ship, because its barrel had been filled with concrete well before its discovery, according to historian Carl Benn, quoted in Toronto Star archives. The massive stadium build unearthed about 1,500 other artifacts, including cannon balls, pottery and a telescope.

But most finds in waterfront development aren't nearly as exciting.

"It's mostly bottles," said Kusturin. "It's interesting junk. The old bottles are kind of interesting because they're old pharmacy bottles and the really old style of Coke and those kinds of things. But that's about as interesting as it gets."

Mysteries still lie undiscovered. Frederick Knapp, an inventor active in the late 19th century, contributed one of the most interesting pieces of history to the landfill.

Launched in 1897, Knapp's "Roller Boat" was supposed to revolutionize water travel. A cylinder that travelled lengthwise through the waves, it was supposed to be faster than any boat at the time and perfectly stable.

What it ended up being was a miserable failure. Historical records of the ship's few excursions say it moved slowly and occasionally needed to be rescued.

"It was just sort of abandoned off the slip of the Polson Ironworks near the foot of Frederick St., and so it always became something of a conversation piece because it was so different from any other ship that had been built," said Moir. The sad cylinder bounced around the harbour, getting in the way and occasionally colliding with ships.

When the time came to fill in the harbour, crews left the mostly useless boat there and dumped fill on top of it. A
How the waterfront was built

It all started with Sir Casimir Gzowski’s vision of an esplanade.

The Polish engineer worked with Grand Trunk Railway to design the esplanade in the 1850s - old Toronto's first major incursion into the lake. The railway owned the central waterfront at the time and tasked Gzowski with designing the first manufactured hard edge along the shore, what is now known as The Esplanade.

"He was the first engineer who really tackled lake filling in a big way," said Moir. "If you think of where The Esplanade is now, that's where he was doing his work."

The original Esplanade St. extended from Berkeley St. in the east to Brock St. in the west. The modern street stops at Yonge St. Portions of the road were buried over time and rediscovered in 1987, when crews were digging the foundation for the SkyDome.

Early incursions into the lake were small piers that jutted south off Gzowski's esplanade, designed big enough to accommodate a company’s warehouse or depot. The expansion continued throughout the 19th century with limited government control. The railway owned much of the land and moulded it to its own whims, while other enterprising captains of industry would carve out their own block of land on the desirable waterfront.

"In the late 19th, early 20th century, there's this growing awareness that the city has to manage its waterfront properly," said Moir. A number of organizations, including the Toronto Board of Trade and the Toronto Guild of Civic Arts, started batting around comprehensive plans for the waterfront.

In 1911, the city formed the Toronto Harbour Commission and put pen to paper on an official plan to harmonize harbour expansion.

The first target was Ashbridge's Bay. Then the largest wetland in eastern Ontario, at about 530 hectares, it was thought of as a source of disease because much of the city's sewage drained into the marsh. Priority was placed on reclaiming that land, both to help spread industry and as a boon to public health.

The modern central waterfront came about as part of the 1912 plan. A jagged mouth of docks and ports was filled with dirt dredged from further out in the lake throughout the 1920s. The filling process involved a machine known colloquially as a "sand sucker" - a large device built at the Polson Iron Works that sat at the bottom of the water, pulling up dirt and passing it through a long pipe over the seawalls.

The technique furthered two goals for the waterfront shapers: it filled lands eyed for development and deepened the channel in front of those lands, allowing bigger vessels to pass through the harbour.

"The waterway was the important access," said Geoffrey Wilson, current CEO of the Toronto Port Authority, speaking in a meeting room at the old harbour commission building.

The room is decorated with pictures of the Harbour St. building in the early 20th century, when Lake Ontario still lapped at its doorstep.
"The port continued to grow in necessity, grow in volumes, right through to, I think it was, 1967 - when the Port of Toronto hit its peak at just over six million metric tonnes of cargo annually off-loaded."

Wilson said the city's port now handles about 1.5 million tons of bulk cargo each year.

It’s still an important part of the economy, he says, but the dynamic of the waterfront has changed.

"The thinking now is we need less industrialization on our waterfront. Obviously our economy has changed, the way we produce things has changed," he said.

"But we still need a very sophisticated transportation network, of which the water highways are a part."

Kusturin said the future of the waterfront holds no dreams for further infilling.

"Honestly, there's enough industrial land on the waterfront that actually needs to be revitalized that would suggest you don't invest in creating more land at this point," he said. "We certainly don't have any additional funding to create additional land area."

The old waterfront reclamation program held the promise of a thriving port. But post-First World War Toronto lost its appetite for heavy industry. And gradually, that sent the waterfront into disuse.

Credit: Tim Alamenciak Toronto Star

DETAILS

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