Department of Speculation

The Toronto of the future will be built twice. First in pixels. Then in concrete and steel.

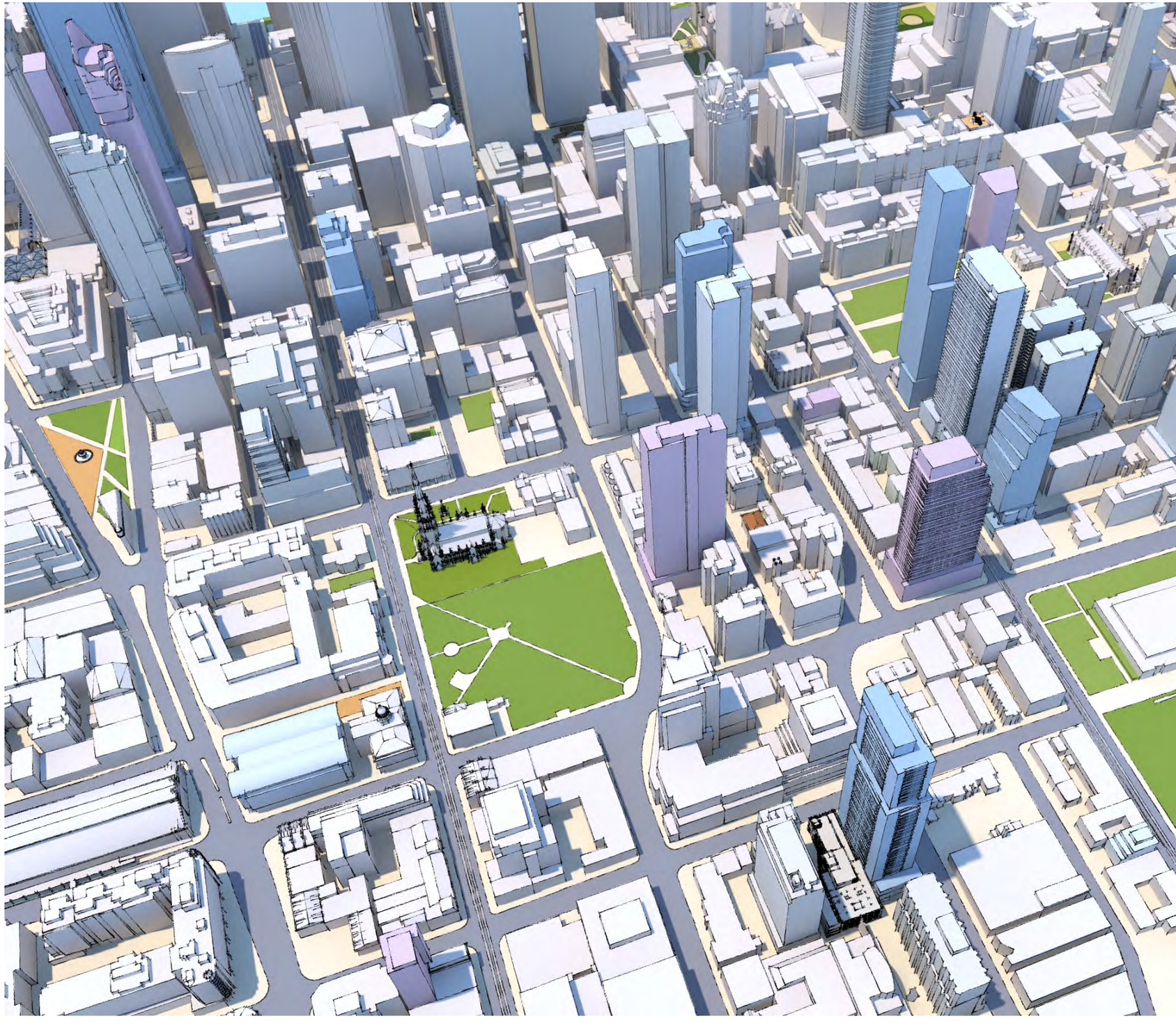
Words by Simon Lewson

Eric Turcotte and his colleagues can see the future. Their prognostications aren't perfect: not everything they see will pan out, and they can't see much beyond a decade or so. But as staff at Urban Strategies Inc., a community planning consultancy in Toronto, they have better insights than virtually anybody else about what the city of tomorrow will be. (Urban Strategies is the go-to consultancy of its type. It has worked on seemingly every big-ticket development, from Alexandra Park and the Centre for Addiction and Mental Health, to Villiers Island and the new Mirvish Village.)

Using the software program ArchiCAD, the firm has built what is likely the most comprehensive virtual model of the downtown core and its surroundings. Visually, it resembles the digital world of Sim City—a pixelated metropolis you can navigate with a mouse, much as you would Google Street View. Most buildings are coloured grey, which means they already exist, but Turcotte—a partner at the firm—and his team have layered in proposed buildings (in purple), approved buildings (in a dark shade of blue), and buildings under construction (in a paler shade). The firm monitors city databases, and when a new plan gets submitted, altered, or green lit, they update their model. Many buildings in the model won't be completed for over a decade. In the meantime, Urban Strategies is left with a detailed, highly predictive map of Toronto in 2035 and beyond.

This isn't just a novelty project. For Turcotte, it's essential to what he and his colleagues do. The Urban Strategies website features a disclaimer stating that, while the group has architects and landscape designers on staff, they specialize in neither domain. They are planners and urban designers, which means they see things wholistically. "Architects focus on buildings, how they look and how they work," says Turcotte. "We're interested in how the city itself is put together."

And they're not only focused on the present day. Generally, attempts to predict (or model) the future are hopelessly speculative—the realm of sci-fi writers and tech-industry boosters—but, for Urban Strategies, the work is pragmatic, even commonsensical. For them, the future isn't an abstraction; it's a real-world domain in which every new building will live.




2000
Toronto’s Built Future


2023


2010


2035

We model to externalize—to visualise and manipulate a field of datapoints that would otherwise overwhelm us.

Jørn Utzon (left) presenting a model of the Opera House at Sydney Town Hall, 1957
Australian Photographic Agency 03870

For as longs as humans have been designing things, we've been modelling them too. The earliest architectural models were made for ritualistic or talismanic purposes. A worshipper at a temple in Bronze Age Syria, for instance, might drink libations from a ceramic vessel shaped like a tower. A deceased Han Dynasty nobleman might be buried alongside a miniature earthenware home, thereby ensuring favourable accommodations in the afterlife.

Only later did modelling become practical. Sometimes, it was a means of expressing the inexpressible: had Filippo Brunelleschi not built a wooden maquette of his Florence Cathedral dome, his patrons couldn't have imagined what his ground-breaking design might look like. At other times, modelling is a way to prove one's doubters wrong. In the late '50s, Sydney residents marvelled at images of Jørn Utzon's proposed opera house, but others questioned the structural viability of the roof—that is, until Utzon teamed up with an engineer, built and iterated miniature versions of the project, and then subjected them to wind-turbulence testing, laying such doubts to rest.

For urban planners and designers, modelling is, above all else, a way to manage information overload. A city, or even just a neighbourhood, is so full of pertinent details—the height of each building, the space between each lot, the location of each street, river, sewer, or ditch—that we humans can't possibly hold the relevant facts in our heads. We model, in other words, to externalize—to visualise and manipulate a field of datapoints that would otherwise overwhelm us.

This is perhaps what the Incas were doing when they carved out relief maps of their irrigation systems in slabs of granite—and it's surely what King Louis XIV of France was doing when he commissioned 140 models of urban fortifications in the country, enabling generals to study the regions and protect them against invaders. In contemporary Toronto, planners model to ensure that buildings don't impinge on other properties, to minimize wind and shadow impact, to protect neighbourhood character, and to spot opportunities for street-level amenities like cafes or parkettes.

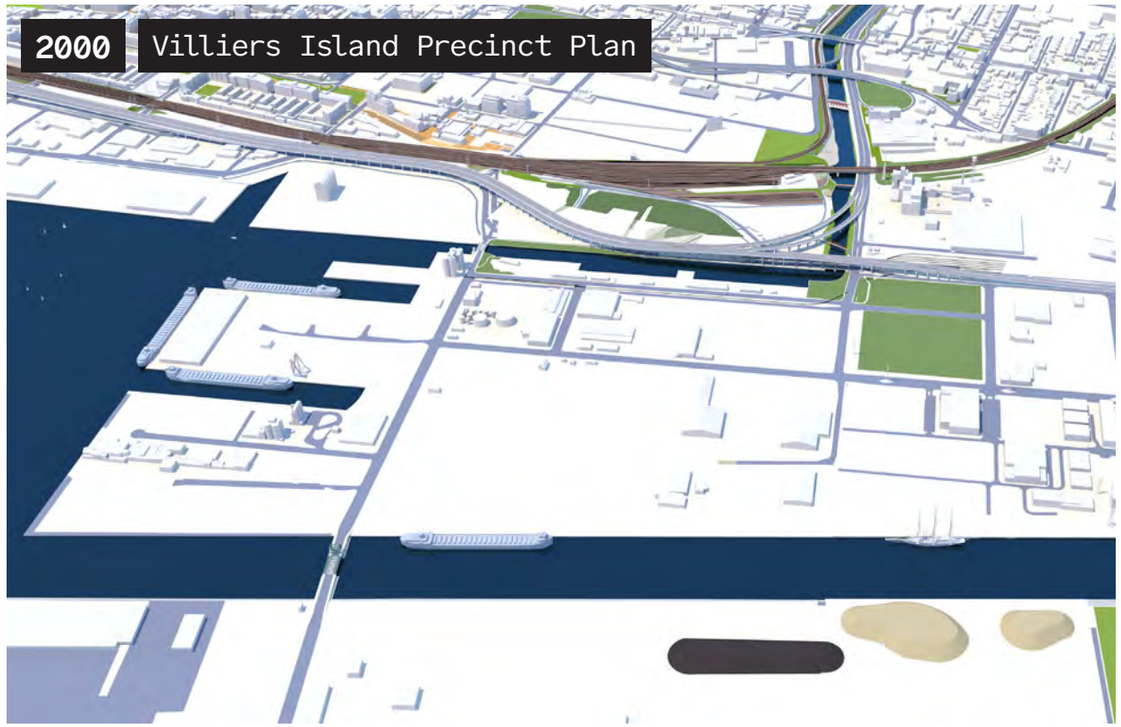
A model can also reify the intangible. Stand at the base of the Hospital for Sick Children or St. Michael's Hospital, and you'll fail to notice the flight paths used by medevac pilots: there is, literally, nothing to see. In the Urban Strategies model, however, the edges of those aerial corridors are demarcated

as the hard boundaries they so clearly are. The city is full of other similarly uncrossable, yet invisible, lines. Some protect views onto City Hall, Queen's Park, or the Cathedral Church of St. James; others prevent developers from building skyscrapers too close to low-rise neighbourhoods. All appear clearly in the Urban Strategies model —more clearly, in fact, than they do in real life.

Modelling also enables planners to attend to seemingly random, yet surprisingly consequential, details. The Urban Strategies model is highly sensitive to ground topography, which matters more than one might suppose. In their initial plans for the east tower at the Bay-Adelaide Centre, the developer Brookfield Properties had capped the building at roughly forty floors, there by ensuring it wouldn't cast shadows onto Nathan Phillips Square. But when the Urban Strategies team entered the building into their model —which accounts for a subtle slope in grade, roughly five metres downward from City Hall to the property line of the proposed tower—they saw what the initial plan had missed. "Because of the dip, Brookfield could build at least four extra floors without additional shadow impact," says Turcotte. It was a critical (and lucrative) discovery. Without a detailed model, nobody would have found it.

Models of the present are essential, but speculative models of the future are often the most dubious kind. The Danish starchitect Bjarke Ingels loves drawing masterplans for elaborate, space-age metropolises worthy of Fritz Lang or Ridley Scott. His latest is an agglomeration of parabolic towers connected by raised transit lines, on which people will commute in hanging, orb-like vehicles. This city, we're told, will eventually be built at an undisclosed location as the pet project of a billionaire investor—two obvious reasons for skepticism.

Entrepreneur Jeffrey Berns, meanwhile, has modelled a community of polyhedral, fortress-like buildings in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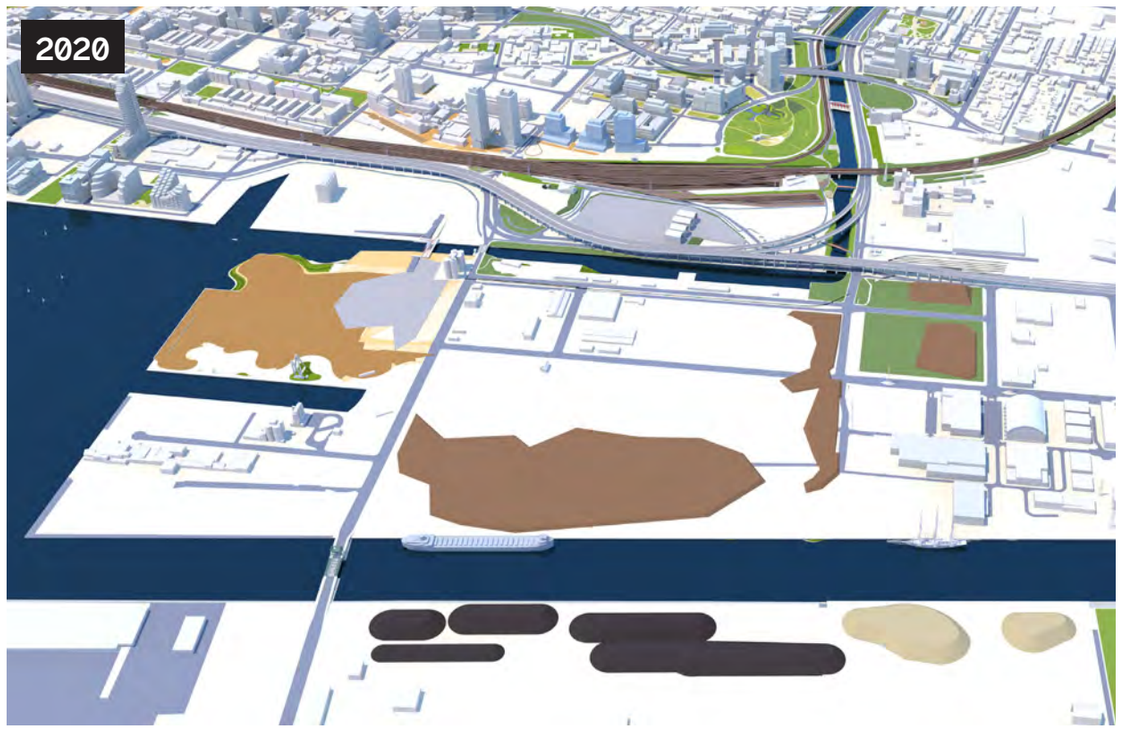
Villiers Island Precinct Plan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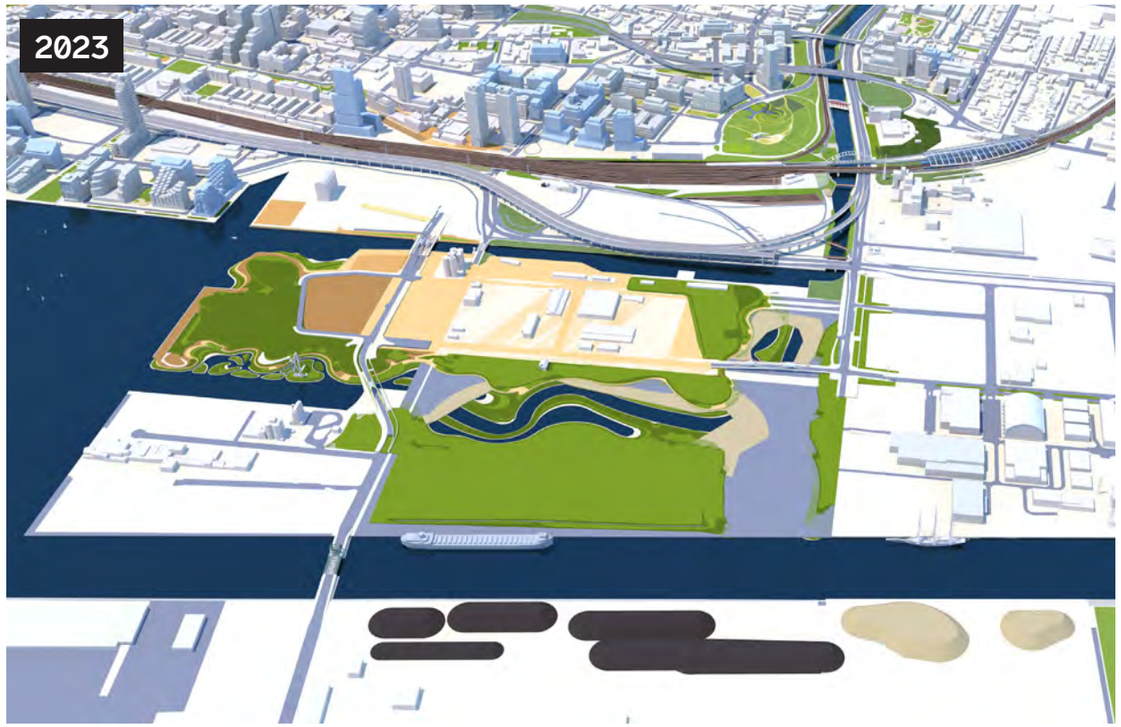
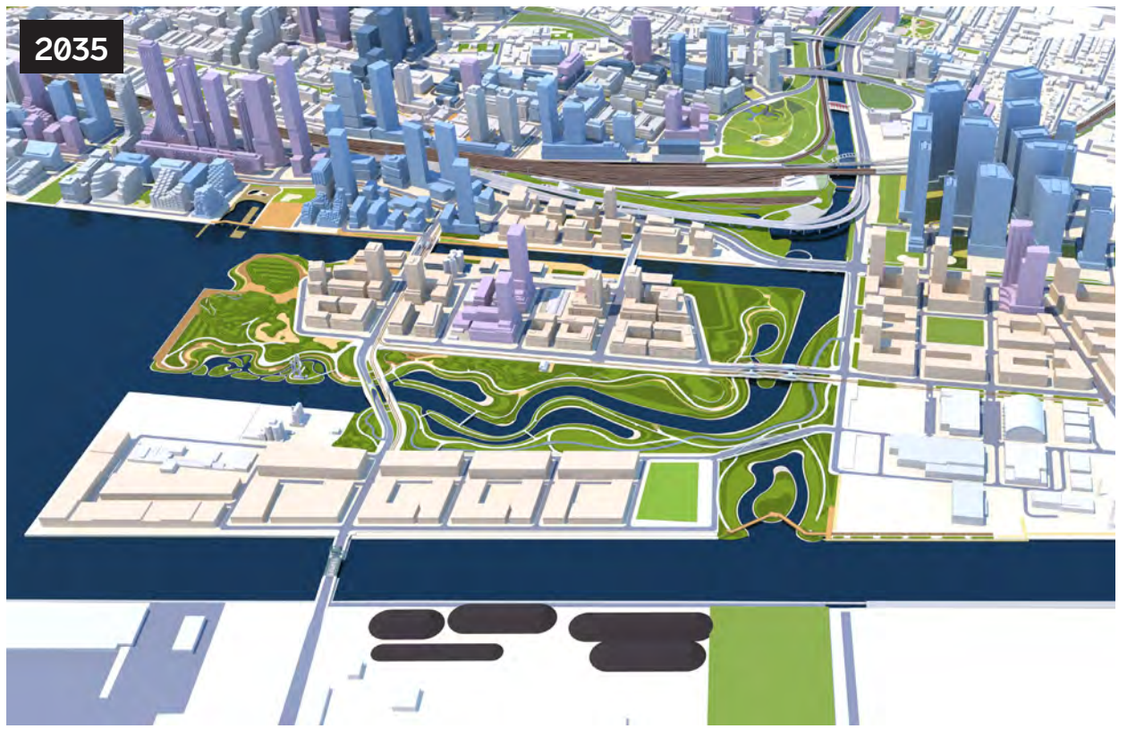

2023


2035

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the Nevada Desert, which, he says, will be powered by green energy and blockchain technology. (The proposal makes Ingels's work seem credible, if only by comparison.) When people model the future, they often succumb to such grandiosity and mysticism. Their work can feel like a return to the totemic or spiritual modelling traditions of the Bronze Age or the Han Dynasty.

The Urban Strategies model doesn't fall into this trap. Conceptually, it is based around a few key insights. First, that the near future matters at least as much as the distant one. And second, that you don't have to indulge in wild speculation to ascertain what that future might hold. You simply have to integrate the available project data from the city. Soon, you'll notice things that other planners miss.

An Urban Strategies client might worry, for instance, that the building they're planning will cast a large shadow, and is therefore unlikely to be approved by the city. But if Urban Strategies can demonstrate that the shadow will merge with that of another future building, the city may look more favourably on the proposal. True, neither building exists yet, but they can nevertheless be studied in relation to each other. "A development shouldn't be penalized for casting a shadow that overlaps with another one," says Turcotte.

A similar logic applies to height restrictions. A developer may be averse to proposing a skyscraper near a low-rise residential neighbourhood, given that the city often vetoes such projects. But if Urban Strategies can show—as they did with a proposed high rise at Bloor Street and Bedford Road—that other tall buildings have already been greenlit nearby, this precedent can strengthen the application. Suddenly, a longshot proposition will become a contender.

The Urban Strategies model exists primarily for planning rather than predictive purposes, but its users can't help spotting a few broad trends. By studying the model, Geoff Whittaker, a senior associate at the firm, has noticed several areas of the city which, he says, will likely transform into thickets of high rises. He predicts that the new Frank Gehry skyscrapers, currently under construction, will loom so large over the entertainment district that it will set a precedent to justify new towers—buildings that, by virtue of their surroundings, will be unlikely to further undermine sight lines, sunlight, or neighbourhood character. "Once the Gehry towers are built," he says, "we could get a chain reaction."

Whittaker predicts other similar chain reactions near Bloor and Yonge Streets, Broadview and the Danforth Avenues, Dundas West subway station, and Canada Square. Each area will soon look like a mini-downtown, and Toronto will feel increasingly decentralized. Density will still be clustered, but the clusters themselves will be bigger and more numerous. The Toronto of the future, he says, will be dense, but not gloomy, bustling, but with an underlying sense of order. The firm's careful, context-sensitive modelling will help it get there. "I think it's going to be a very good place to live in," Whittaker adds. In a world where futurists often talk breathlessly about sentient robots and fleets of autonomous vehicles, this prediction—while modest—feels like it might actually come true. F