

Toronto Sky Farm - Grow UP

If designer Gordon Graff gets his way, a new skyscraper in Toronto's Theatre District could be the unlikely source of food for 35,000 residents.

The SkyFarm project is the concept-only design for a 58-floor tower that would produce as much food as a 420-hectare farm. The building would be 238-metres tall and contain 750,000-square metres of hydroponic growing area, with products ranging from soybeans to strawberries to high-rise fields of lettuce. A service core at the back of the tower would include irrigation and electrical systems, and an isolated lower area could house chickens bred for both eggs and meat.

The challenges inherent in the stacked design are odour and pest control, effective drainage, and the complex system of trucking and distribution that would be required at grade. Such a structure, however, would theoretically avoid problems like seasonal droughts, diseases spread by livestock and water runoff pollution. Plus, Torontonians would gain the benefit of locally-grown produce, and growth could be greatly accelerated with a controlled artificial climate and 24-hour "sunlight" year-round.

Though the idea may seem somewhat far-fetched for a hesitant, cash-strapped city like Toronto, we have reason to be worried about our fresh food supply. Farmers are a dying breed, farmland is wasteful when it comes to space, and as we grow, we pave over our countryside with subdivisions. According to the United Nations, the world's population growth over the next thirty years will require 60% more food than we produce now. By 2050, almost 80% of Earth's population will live in urban centres.

Perhaps the best direction to go now is up. High-density greenhouses would be an efficient use of energy, space and water, and such a building would have a massive green-roof effect. Much of the waste could be recycled, composted and reused, and the vertical farm could operate entirely organically and without the use of pesticides or fertilizers. Though the design and construction would be extremely expensive, Graff believes that the farm could reap about \$23,000,000 in annual revenue. A corporation like Loblaw's or Dominion could build a revolutionary flagship hydroponic structure that could include a supercentre at its base and service its other stores, while taking advantage of the incredible global publicity that would result from such an environmentally revolutionary project. Richard Branson: call us.

Sadly, we wouldn't likely see a farmscraper in Toronto for two more decades, but we can imagine a day when they are no longer be a novelty on our skyline. Not only in dense downtown, either—they'd be perfect for some of our troubled properties, like the desolate area formerly populated by Tent City down near the Gardiner, now owned by Home Depot. It could also be a scientific and eco-tourist attraction, and Toronto could be the first metropolis to mass-source its fresh restaurant food directly from its own inner-city urban organic farm!

We don't currently have many problems in the West with supplying food—it's just that the way we do it happens via disproportionately wasteful and polluting practices. It may be that vertical farming is a step in giving back some of the nature we've destroyed, and who can argue with cheap, local, organic produce grown right before our eyes? We shouldn't just talk about it for decades—let's get serious about this one, Toronto.

About the Author

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