

GREEN ROOFS: The Sky's the Limit in Toronto

Why Green Roofs?

The application of green roofs at a city-wide scale improves urban sustainability and is often a function of municipal government policy creation.

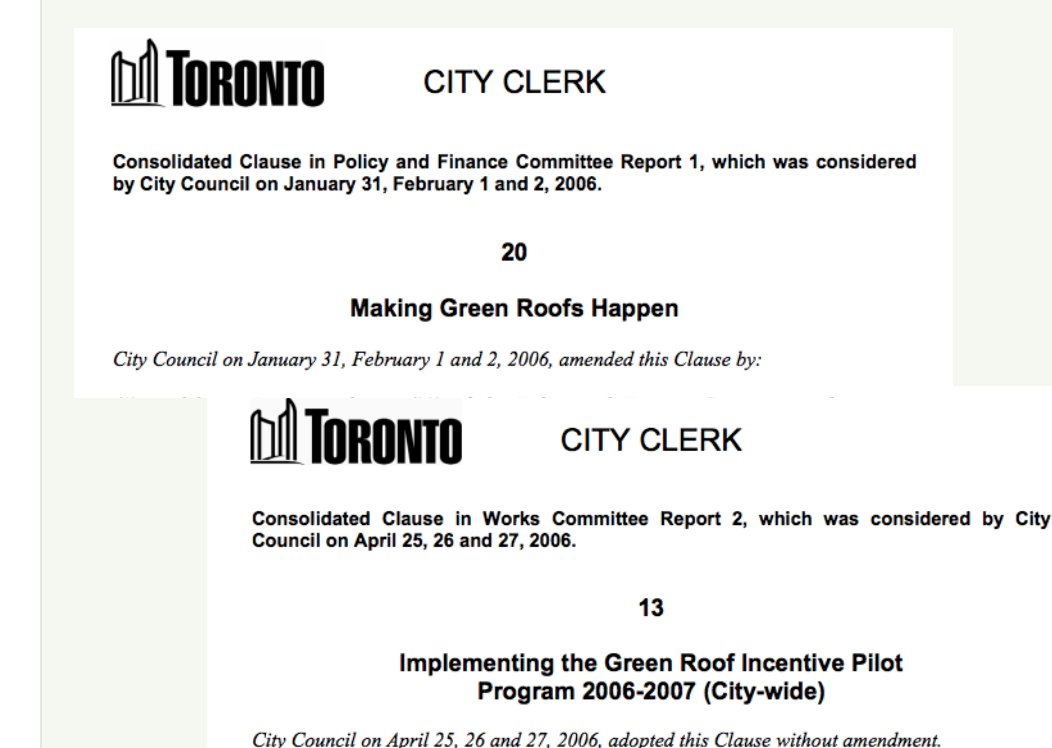
Using Toronto as a case study, this research project outlines the role of policy in green roof implementation at a city-wide scale before analyzing the benefits of green roofs for cities from architectural, planning, and ecological perspectives.

In an increasingly urbanizing world, transforming densely populated urban agglomerations into sustainable spaces is a critical component to mitigating the effects of climate change. Green roofs increase the sustainability of urban areas, and with careful consideration of the negative aspects, will help create healthier cities.



Image by UoT students via Citylab

Toronto's Green Roof Timeline:



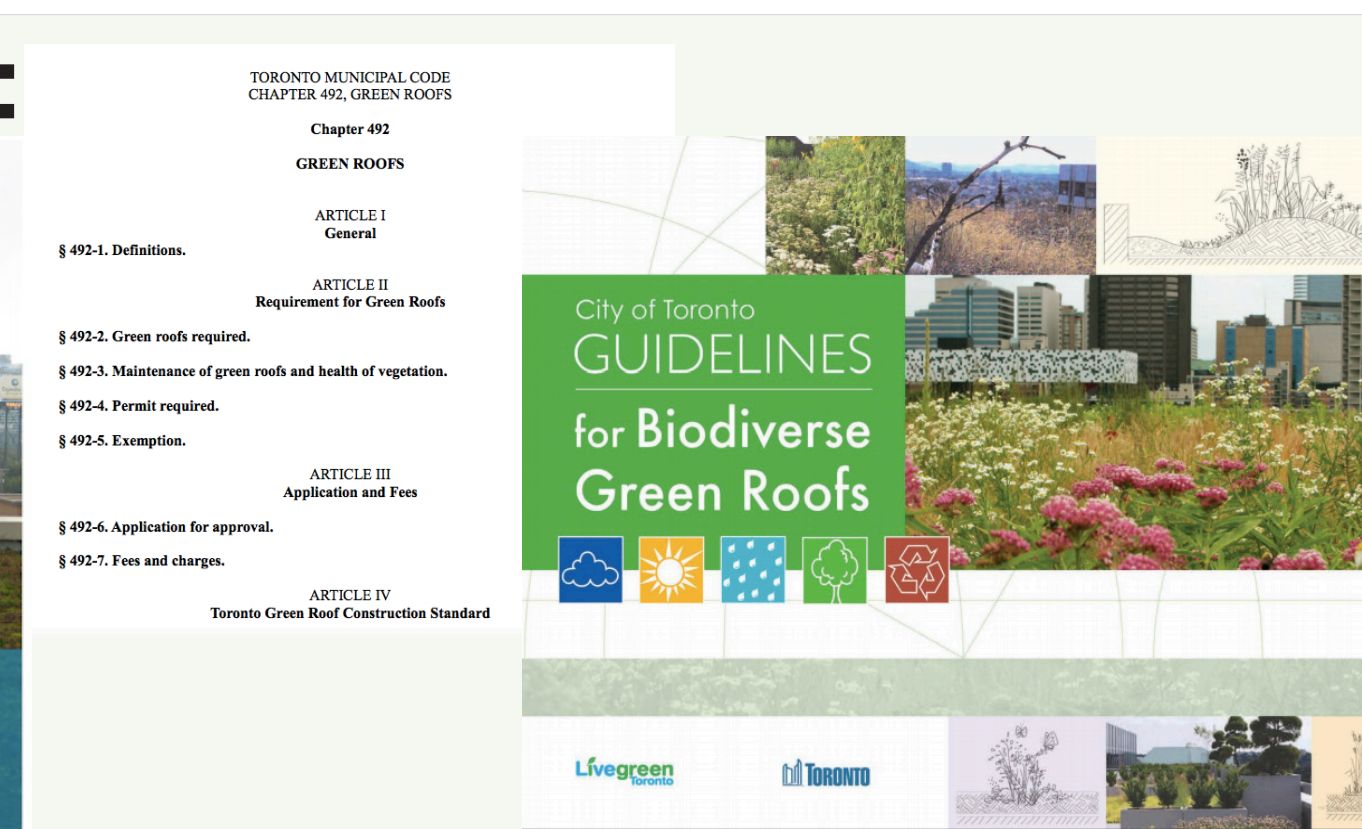
2006

Making Green Roofs Happen strategy introduced and adopted by Toronto City Council.



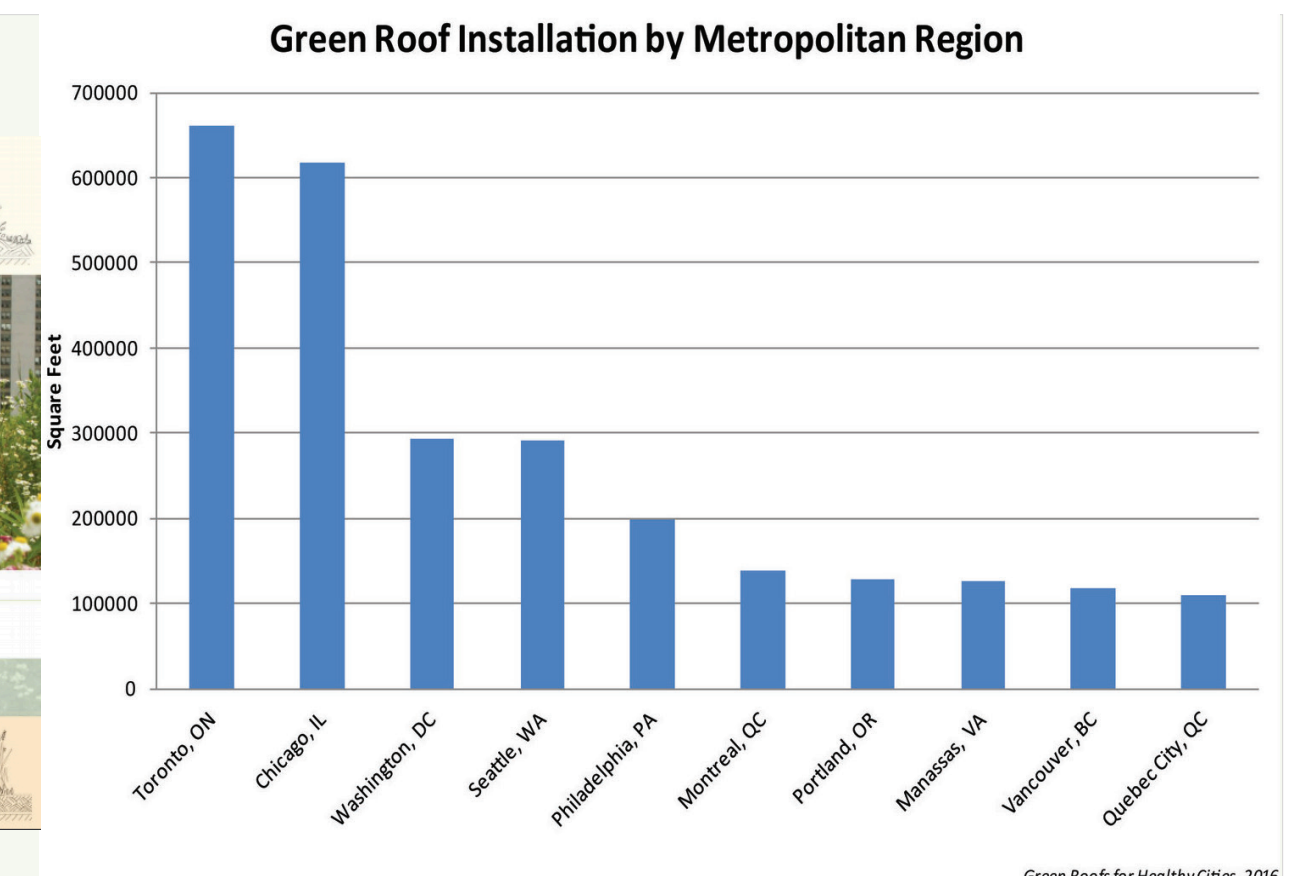
2009

The province amends The City of Toronto Act to allow the city to create the **Green Roof By-law** and construction standards.



2013

City releases **Guidelines for Biodiverse Green Roofs**.



2016

Over **400** green roof applications received...and the number continues to rise.

What are Green Roofs?

A green roof is a roof covered in vegetation and typically belongs to one of three categories:

- extensive
- semi-intensive
- intensive

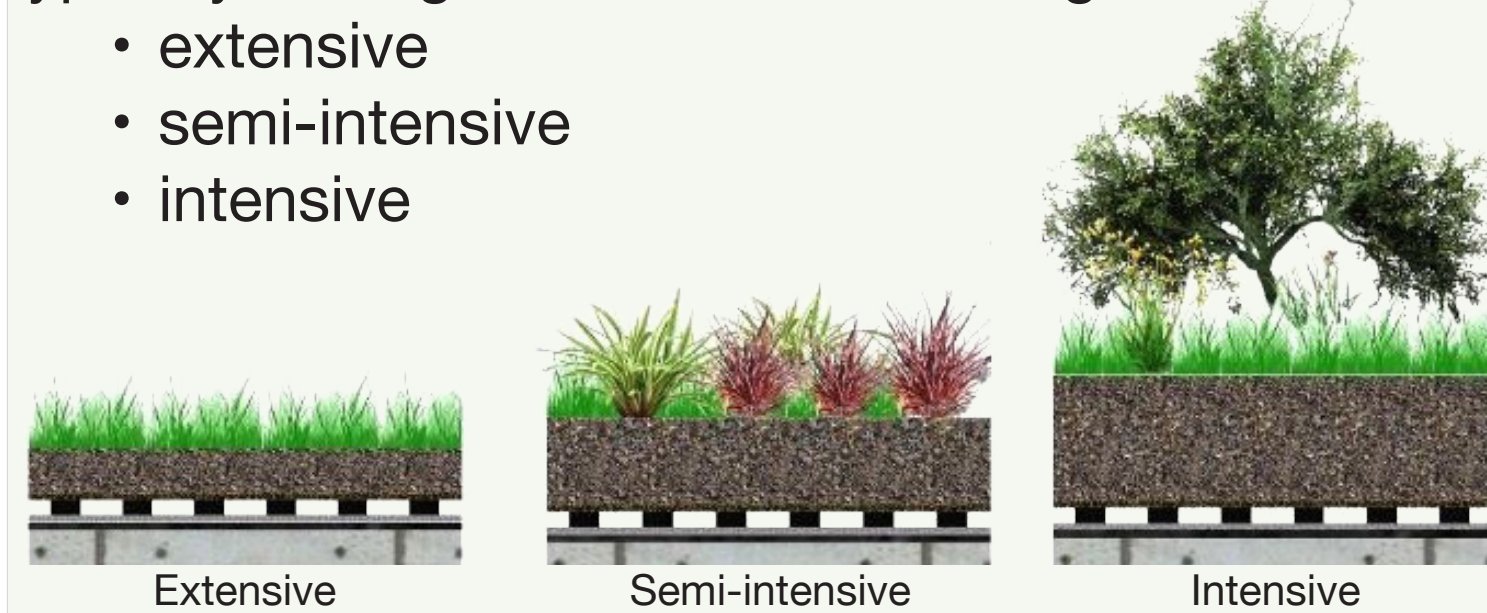


Image by Raji, Tenpierik, & den Dobbelaar via Build Up

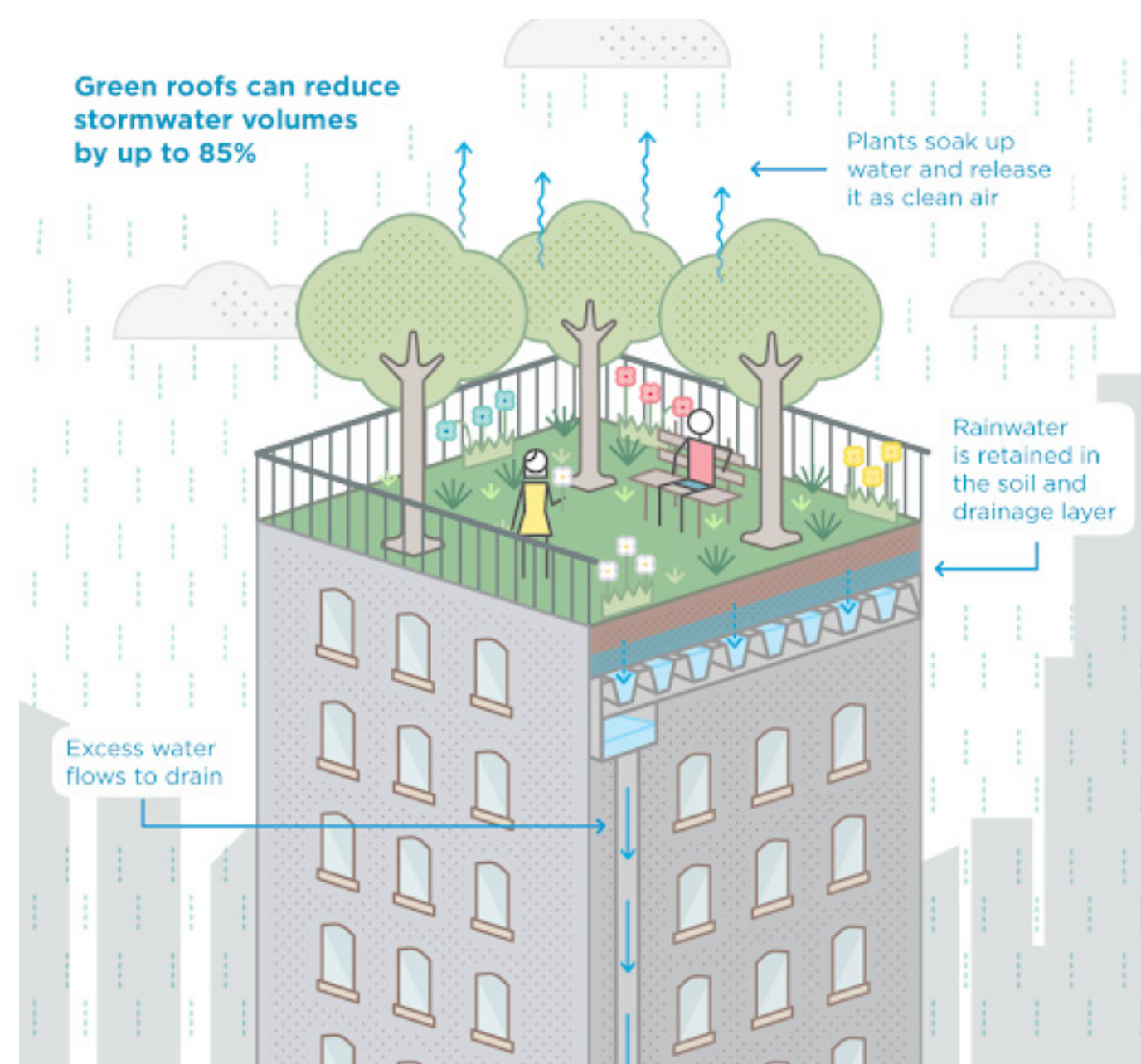


Image via <http://urbanwater.melbourne.vic.gov.au>



Image of Centre for Social Innovation via <https://condo.ca>

Green Roofs are Multidisciplinary:

Architecture:

- Green roofs are at the intersection of agriculture and architecture - the agriculture design frontier!

Planning:

- Green roofs create economic opportunities, require less investment in stormwater management and cooling, and create a healthier city!

Ecology:

- Green roofs can support plant and animal life!

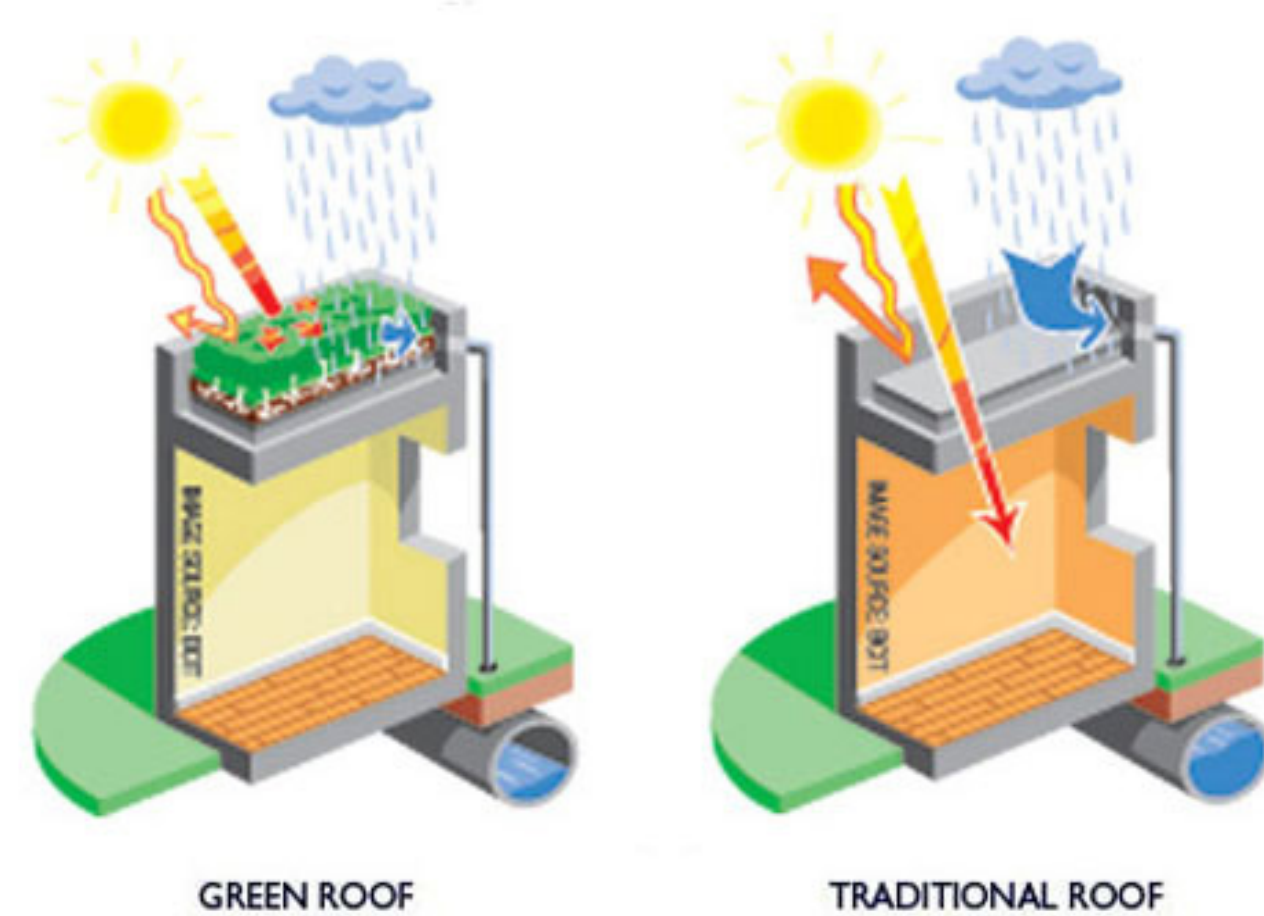


Image via <http://intermountainroofscapes.com>

How do Green Roofs Benefit Toronto?

The **main benefits** of green roofs include:

- reduce heat island effect
- improve air quality
- reduce stormwater runoff
- capture rainwater

The **varied purposes** of green roofs include:

- gardens
- food production
- biodiversity



Image of Ryerson Urban Farm via <https://www.greenroofs.com>



Image via <https://www.greenroofs.com>

Bee nesting box, 410 Richmond Street, Toronto (Machvor, 2011)

Toronto the Green:

Toronto's green roof case study is a useful guide for cities wishing to create evidence-based green roof policy which contributes to healthier cities and a more sustainable global urban future.