

Green Cities

Lesson 4, Strategy 4

Sustainable Development

Photo courtesy of [DOE/NREL](#) | Photographer: Katrin Scholz-Barth

The Chicago City Hall green roof helps cool the building, reduce energy costs, minimize water run-off, and improve air quality.



<http://ecosalon.com/high-tech-green-roof-technology-in-architecture/>

ACROS Fukuoka,
in Fukuoka City,
Japan. 35,000
plants, 76
species – and
the city's best
view from an
office window.



The Sustainable Green Roof for Living Laboratory in Boston

<http://www.architecture-view.com/2010/09/04/the-sustainable-green-roof-for-living-laboratory-in-boston>



Vertical Farming in Skyscrapers

Benefits of growing plants in cities:

- Local transportation costs
- Disease free food
- More productive year round growth – many growing seasons per year
- Weather independent quality – indoor crops not damaged by weather events

<http://mushroomuniverse-malaysiaformalaysian.blogspot.com/2010/11/vertical-high-rise-farming.html>



Skyscraper farming

A futuristic concept converts skyscrapers into crop farms that could help reduce global warming, improve the urban environment, and help feed the world's growing population. How it would work:

SOLAR PANEL

Energy is supplied by a rotating solar panel that follows the sun; drives interior cooling/heating system.

GLASS PANELS

Clear coating of titanium oxide collects pollutants and makes rain slide down the glass where it is collected and used for watering.

ARCHITECTURE

Circular design allows maximum light into center.

ECONOMY

The plan combines farming with office and residential stories.

IRRIGATION

Filtered, sterilized wastewater from sewage system can be used for irrigation.

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SOURCE: Vertical Farm Project

