VIEWPOINT

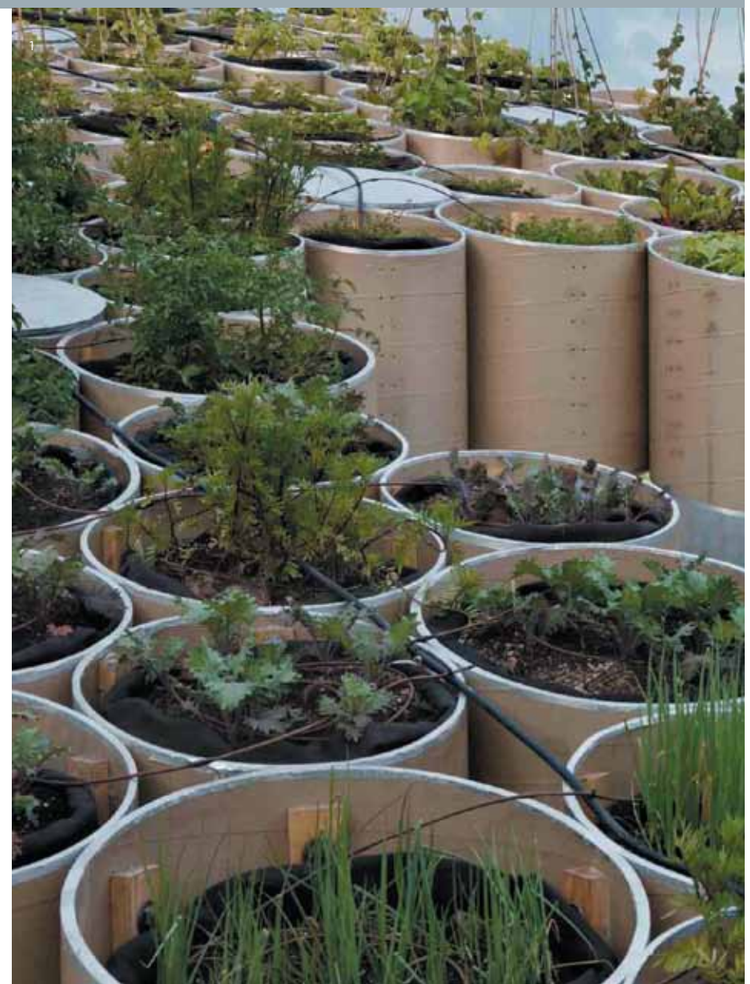
Carrot City
Designing for urban agriculture

The separation of cities from their food sources is directly related to many of the most pressing problems in the world today – climate change, obesity, energy supply, pollution, resource availability, global poverty, and food security. For example, the concerns about peak oil and other future resource shortages have a huge impact on food given the energy intensity of current food production methods and the use of [fossil fuel based] fertilizers.

BY DR MARK GORGOLEWSKI

Climate change is also significantly impacted by food production - the World Wildlife Fund estimates that the food supply chain contributes about 30% of total UK greenhouse gas emissions. With the world population becoming more urban by the day and recently reaching 7 billion [and predicted to grow to 9 billion by 2050] what we eat, how we produce it, and where it comes from, become key factors in the future resilience of our cities.

In the past, when transport options and food preserving technology were limited, close links existed between the forms of cities and their regional food supply. The design of buildings and urban spaces was influenced by the need to grow, process, preserve, and store food locally. However, with the rise of industrialisation, cheap transport, refrigeration, and other shifts in the 20th Century, large-scale agribusiness has largely become a specialized rural activity, and food distances to market have become long. Growing fruit and vegetables in western cities has largely become invisible and the connection between the forms and patterns of built settlements and their food supply systems has largely been broken.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Growing food close to, or within cities can reduce dependency on distant food supplies, industrialized production, packaging, and transportation. Apart from reducing the urban ecological footprint and enhancing food security, urban agriculture can also play a role in addressing food quality, greening the city, improving air quality and water management. It can also act as a focus for urban community participation and engagement and increase awareness of the health issues.

Movements such as community supported agriculture [CSA], farmers' markets, the 100-Mile Diet, and Slow Food are putting local food supply at the heart of urban sustainability. Reconnecting cities to their food systems and developing locally-based and less carbon dependent food systems is now emerging as one of the core components of more sustainable and resilient urban settlements.

This raises questions about the implications of urban food production on the form of buildings and urban spaces, particularly in dense urban areas, and how to reconcile growing urban populations and densities with the use of space for food production. Despite constraints that range from zoning restrictions to construction codes, some designers have recently started to consider the promise of urban agriculture as a driver for new types of urban spaces and buildings, and to contribute to developing more locally-based food systems. At the city planning scale municipalities such as Vancouver, Toronto, London and New York, are investigating strategies that consider food systems as part of a sustainable strategy, creating economic potential, improving public health, and protecting the environment. The work carried out at the early planning stages of the Southeast False Creek [SEFC] project in Vancouver demonstrates how planning at the neighbourhood scale can facilitate the introduction of agriculture into high-density, high-rise urban areas.


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CYLINDRICAL CONTAINERS CAN ALLOW FOR ADDITIONAL SOIL DEPTH WITHOUT INCREASING THE OVERALL LOAD ON THE ROOF [1]. THE VEGETABLE ROOF GARDEN AT THE GARY COMER YOUTH CENTER IN CHICAGO WAS DESIGNED AS AN OUTDOOR CLASSROOM BY HOERR SCHAUDT LANDSCAPE ARCHITECTS [2].

At the building scale, designs for community food centres such as at Artscape in Toronto, vertical farms, community gardens, productive roof-scapes, aquaponic greenhouses, and buildings that incorporate food production are being proposed. Several condo buildings in Canada have included food growing opportunities for their residents on roofs and in greenhouses. Commercial farming can be seen on rooftops in cities such as New York, Vancouver, and Montreal where a hydroponic rooftop greenhouse business has recently opened. Even at the component scale proposals such as innovative double skin facades with food production within the cavity integrate food production into the skin of the building. Such examples have the potential to transform the basic assumptions about the functions and forms of spaces, structures and infrastructure in the city.

RENDERING OF PROPOSED VERTICAL GREENHOUSE INTEGRATED INTO BUILDING SKIN [3]. THE DESIGN OF BUILDINGS AND OPEN SPACE CAN OFFER MANY OPPORTUNITIES FOR URBAN AGRICULTURE [4].

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Carrot City is an initiative started at Ryerson University that aims to highlight the overlap between local food systems and urban design. It includes an exhibition, forthcoming book and web site that address how the design of cities, urban landscapes, buildings, and gardens can facilitate the production and processing of food. It explores the role of the design professional in strengthening the links between urban environments and food, and the impact that food issues have on the design of urban spaces and buildings. A series of conceptual and realized projects are featured that enable urban food production, helping to re-introduce growing food to our cities.

Carrot City can be viewed at www.carrotcity.org and will be published in book form by Monacelli Press in the September, 2011. The exhibition will be shown at the Palais de Congres in Montreal in August-September 2011 during the Ecocite and ISUF conferences. ◀

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