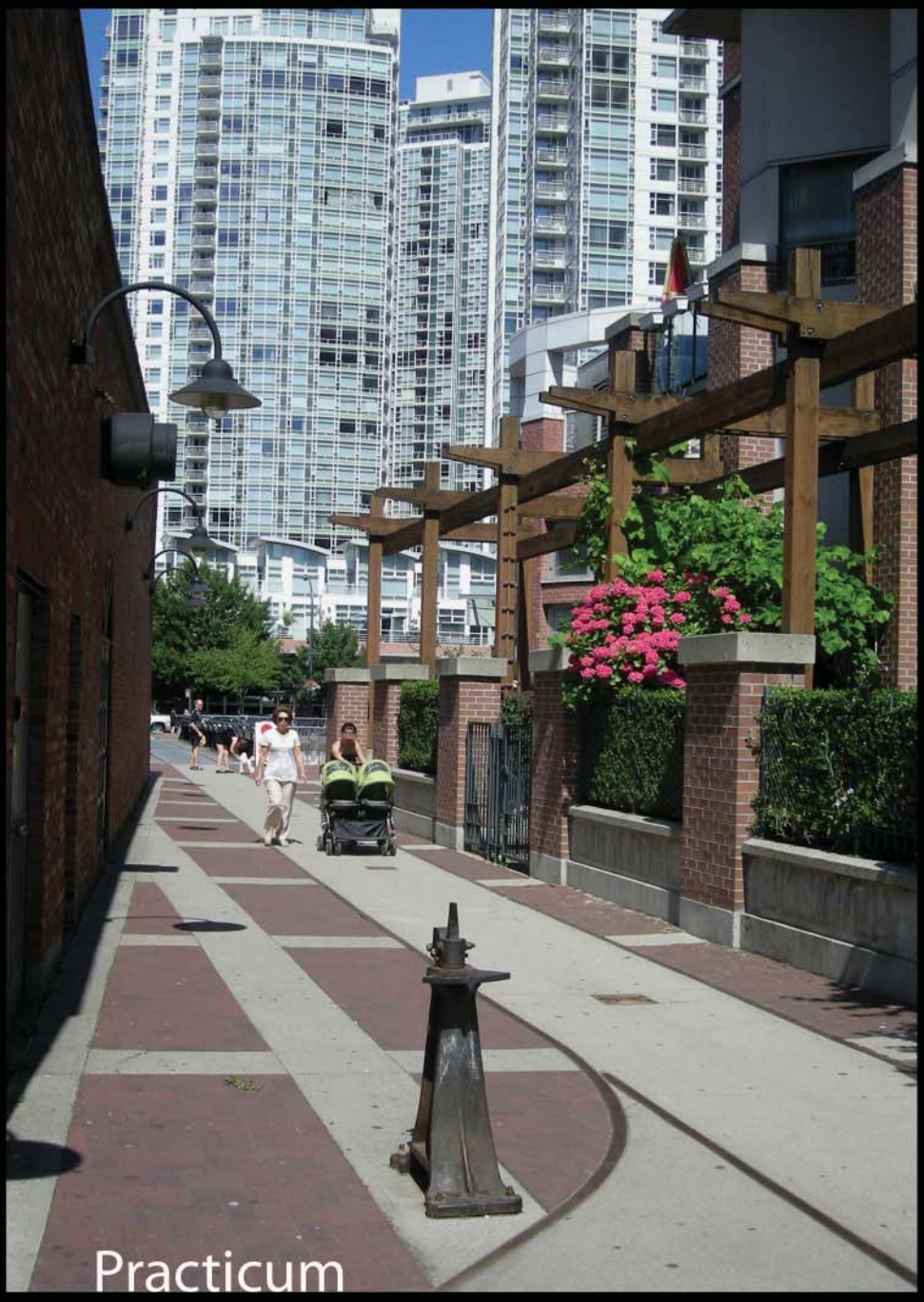
Practicum

Metro Vancouver: Designing for Urban Food Production

By Daniel Roehr and Isabel Kunigk

Abstract

This article focuses on the role landscape architects and planners can take in the creation of urban food production landscapes. It draws upon a series of local projects and visions to demonstrate how this can be accomplished. Within the context of Metro Vancouver, there are significant constraints to expansion due to geographical limitations, a steadily growing population, and large low-density residential areas. Successful food production strategies for the future can be achieved by integrating urban agriculture into a wider city planning context, and transcending the creation of community gardens. The challenge is to provide custom solutions for specific neighborhoods, at all scales, from the urban core to the suburbs, and beyond. The design of food production sites within the urban core and, particularly, the edge condition between residential development, and farmland, will challenge landscape architects to create real places of interaction between man and land.

Introduction

Similar to other North-American cities, urban food gardening in the Metro Vancouver area1 has served a range of needs and purposes. These include: safeguarding people from starvation in times of war and economic depression; supplementing basic nutritional needs in more peaceful times; fighting unemployment and urban decay; creating communities, and fostering a sense of optimism. The rise in popularity of urban food production can be seen as a reaction against threats to the environment, as a means to conserve energy, and as a way to promote organic local farming for healthier, more environmentally-friendly living.

In times of economic downturn, there is a renewed interest in the production of food within cities. Threats posed by climate change have added to the urgency of the joint task of creating communities that are less dependent on food, and energy imports while integrating people into these communities. Greater Vancouver's geographical context

[1] Metro Vancouver comprises 22 member municipalities and one electoral area on a total land area of 2,877.36 square km with a estimated population of 2,271,224 in 2008.

makes it particularly susceptible to the impact of population increase and climate change. The ocean, and the mountains create natural barriers against expansion. Despite the Agricultural Land Reserve legislation that protects most of British Columbia's farmland, the agricultural land-base is shrinking due to development pressure (City of Richmond 2009; City of Burnaby 2009). Climate change and the ensuing sea level rise threaten significant areas of farmland in the lower elevations of the urban agglomeration (Bornhold 2008; Natural Resources Defence Council 2008; Taylor 2000).

This article focuses on the roles landscape architects and planners can play in the design, and planning of urban food production. It discusses the challenges they are faced with, and examines the role of education - whether students, the public or practitioners - in addressing these challenges. Two planning practice examples, and a theoretical study were chosen to illustrate a spectrum of approaches, drawing upon local and international practitioners, researchers, and students.

Roles of Landscape Architects and Planners in Urban Food Production

In order to examine the roles that landscape architects and planners can take in the planning process for food production within cities, we draw upon one built, and two un-built project examples. In both cases, practitioners and researchers have dealt with multiple scales of agriculture: from window boxes and roof gardens; to public greens, and farms. The three examples presented here differ greatly in character and location. The first project: South East False Creek and the 2010 Olympic Village, is a new high-density inner city neighborhood. It illustrates a strategy for the integration of opportunities, and requirements for food production into the Official Development Plan of this site; the second project: Southlands Tsawwassen, is a proposal for a new community development on the urban agricultural periphery that strives to develop a neighborhood using the principles of *Agricultural Urbanism*; the third example is a study conducted for the Brentwood neighborhood in Burnaby that retrofits an existing community with facilities for food production, and offers a vision for future landscapes that mitigate climate change.

Project 1: Urban Agriculture Strategy for the Southeast False Creek and 2010 Olympic Village Development, Vancouver, B.C.

Planners for this new community development questioned the relationship between agriculture, food and sustainable development.

In 1989 the City of Vancouver Planning Department and its consultants organized a multidisciplinary design charrette to imagine what a sustainable neighborhood might look like at Southeast False Creek (SEFC). In 1999 the City of Vancouver issued a policy statement that foresaw SEFC to be a model of energy efficiency sustainable urban development, and a precedent for future development projects. A series of sustainability studies were commissioned by the city to reach this goal. Holland Barrs Planning Group in association with Lees + Associates2 undertook the SEFC Urban Agriculture Study, which focuses solely on the role that food-related activity and urban agriculture can play in the comprehensive planning of a new neighborhood. The ensuing results were built into the Official Development Plan of the site, followed by rezoning of individual parcels, and subsequent issuance of development and buildings permits.

Located on the southern shore of False Creek, in Vancouver, British Columbia, South East False Creek occupies 1.4 million square feet and is Canada's largest single-phase development to date (City of Vancouver 2008). The new neighborhood is a high-density community that includes the 2010 Olympic Village. The development is scheduled to be completed in time for the opening of the Olympic Winter games in February 2010.

The role of Holland Barrs (and associates) was to conduct research and to give direction on how to integrate urban agriculture at each stage of the subsequent planning process. At the outset, the firm brought together a number of concerned parties (e.g. urban agriculture advocates, stakeholders, the development community) in a series of workshops to define strategic objectives that range from "increasing the amount of food grown in SEFC, privately and commercially", to "encouraging the celebration of food and the local food system". Each of the nine objectives gives way to a series of actions and policy directions, and recommends how to implement food production options.

A number of options for food production, food processing, and food distribution (e.g. edible landscaping within the public realm, shared commercial kitchen, farmers market) were elaborated upon, and tested against a set of criteria prescribed by city planners. Two implementation tools are of particular interest: the encouragement of incentives rather than the requirement that stakeholders adopt certain food production practices; and the idea that the city invests in urban agriculture demonstration projects in order to prove the feasibility of novel technologies or approaches that are untried in local circumstances. Further, one of the key issues touched upon in the report is the impact of a medium-to-high-income neighborhood (with 20% non-market housing, and 35% family housing) on the physical appearance of urban

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agriculture. Real estate values are directly affected by the look of urban agriculture in this context, which presents itself very differently in low-income neighborhoods with underused land.

Through a series of brainstorming workshops, the planners expanded their knowledge on urban agriculture and integrated the resources and concerns of civic organizations, stakeholders, and the public into the final strategy. This method served to inform the community about complex issues regarding the food system. In addressing policy barriers and gaining the feedback of the development community and stakeholders, the planners ensured the successful integration of urban agriculture at all levels of the planning process.

Project 2: Public Design Charrette for the Southlands Tsawwassen Property, Delta, B.C.

The second project illustrates the role of landscape architects and planners, in urban food production through a public design charrette for the development of about 2,000 acres of mostly agricultural land. Conducted in May 2008, the charrette was based on a design brief entitled *Southlands – A Vision for Agricultural Urbanism* that had been previously developed by the Southlands community planning team, a volunteer group of residents, at the invitation of Century Group, the majority land owner.

Located in suburban Tsawwassen, in the southern part of the municipality of Delta, this property has been, and continues to be, the subject of heated debates. The fact that the Tsawwassen community has been strongly opposed to any development of the Southlands property for over two decades is what seems to have prompted Century Group to organize *The Southlands Public Design Charrette* in May 2008. The eight-day charrette was led by Duany Plater-Zyberk & Company, bringing together a number of local practitioners as well as members of the community3. Similar to South East False Creek, the planners proposed to develop Southlands as a new and influential model of agricultural urbanism, which would provide for the integration of sustainable food systems into all neighborhoods. The Southlands design follows new-urbanist principles: a mixed-use, compact, connected, walk able community, which will seamlessly integrate food production and cultivation with urban living (Duany 2009).

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[3] Duany Plater-Zyberk & Co. in collaboration with architect Hulbert International Group of West Vancouver and over two dozen other participating architects and planners including Doug Farr, Bill Dennis, Patrick Condon, Steve Mouzon.

The charrette resulted in two interim master plans for the new community. The plans vary in their interface and connection with the existing village as well as their placement of urban settlements within the site. Both let the integration between agriculture and urban development happen at all scales: from high-density housing with window boxes, to less dense houses with kitchen gardens, to quarter-acre plots, 50-acre farms, and one 160-acre farm (Duany 2009). The edge of the mixed-use development is designed to weave together urban area and agriculture. Based on a design study previously undertaken by landscape architect Edward Porter, "nubs" of small-scale farms intertwine the edge of the development with adjacent farmland, thus creating a "deliberately designed urban-agricultural edge" (Porter 2006).

This project differs from the previous case: the charrette was commissioned by a private developer in order to gain public acceptance as well as innovative design solutions for the potential development plan. A design charrette is no small undertaking; it is costly and intensive, but beneficial in that it can increase community learning about complex issues. The Southlands charrette successfully engaged a range of experts and community members to collaborate and set a new standard for implementing sustainable urban food systems.

Project 3: Climate Change Mitigation Study for Residential Neighborhoods in Burnaby, B.C.

Planning for organic food production as part of a strategy to achieve climate change mitigation within existing Vancouver neighborhoods is part of Ellen Pond's award-winning graduate research project *Revealing Climate Change Mitigation in the Landscapes of the Future: Retrofitting Residential Neighborhoods, A Burnaby Case Study*. This comprehensive study proposes strategic density increases, local electricity production, urban agriculture and alternative public transportation as solutions for a future low-carbon neighborhood. It provides technical data, an analysis, a design process and preliminary design solutions.

Located within the Still Creek watershed of suburban Burnaby, British Columbia, the study area is now composed of car-dependent, low-density residential neighborhoods that rely on standard food and electricity sources. Pond proposes to make public space in the Brentwood neighborhood productive rather than decorative through City-Supported Agriculture, thus serving local food needs and connecting people to food production.

Pedestrian pathways are maintained within block farms while roads are removed and replaced with agricultural crops. A combined approach

for the energy solution includes conservation and efficiency increases, geothermal systems, photovoltaic panels, passive solar new builds and retrofits to potentially reduce per capita household green house gas emissions from 2 to 0.22 tons per year. A neighborhood center becomes the node for urban agriculture demonstration sites, community services, provides outdoor space for multiple uses and other participatory functions.

Findings of this study reveal that there is no need for extraordinary solutions. Existing technology, simple site-specific solutions and policy changes will suffice to create these low-carbon neighborhoods. Working across scales, conserving energy, integrating urban agriculture alongside an adjusted public transportation system in a strategically densified community will help mitigate climate change and increase local resilience.

The biggest challenges are current perceptions and a lack of vision. Interventions in the public realm, particularly the transformation of former parkland or roads into sites for agricultural crops or block farms, will solicit the skills of the landscape architect to address "the concerns of people for orderly and beautiful vernacular landscape expressions" that evoke a sense of place (Pond 2008).

Challenges to Urban Food Production

Successful integration of farming or food production into cities faces complex regulatory, economic, social, and environmental challenges that impact the planning and design of urban agriculture. Policies, regulations, and zoning bylaws can pose barriers to implementing urban agriculture strategies (e.g. street tree guidelines can limit the occurrence of fruit or nut bearing trees in the public realm). Public health bylaws and food handling standards might restrict the sources, and on-site processing of agricultural products for reasons of food safety.

The impact of urban agriculture on adjacent land values and land uses has to be addressed, including the cost implications that these implementation options will present. Moreover, public perception plays an important role: urban agriculture might be deemed inappropriate within an urban environment. Agriculture is also often associated with a number of undesirable consequences (e.g. dirt, odors, noise, insects, untidy appearance). In Vancouver, like most cities, the cost of public land is prohibitive to the economic viability of small-scale urban food production. Cities need to ask themselves whether they want to encourage urban agriculture solely for the public good. The fact that limited amounts of food can be produced at any given location, and would be inadequate for the population of the given neighborhood, poses the problem of fair

access to the food. Generally, commercial farming using public land raises a number of concerns, such as: security measures against vandalism and theft (i.e. fences, limits to public and pet access).

Environmental issues such as land contamination restrict the growing of food crops for health and safety reasons and removal costs can be a limiting factor. The benefits of urban agriculture versus energy consumption of certain food production types have to be weighed. For example, energy intensive green house agriculture may not be worth pursuing.

The Role of Education

City planners need to enable the integrative planning of urban agriculture by providing a number of supports (e.g. administrative, financial, and personnel). They can also facilitate relationships and play a bridging role across disciplines: between public, private, and civic organizations. As enablers, they can commission study initiatives that allow for research and flexible multi-layered brainstorming approaches, thus expanding their knowledge and involving the public.

Research and education professionals need to embed food production in the syllabus of University programs. Future practitioners should learn to contextualize urban agriculture and understand the way food is grown, processed and distributed. Successful integration of urban agriculture depends on the level of public awareness and acceptance. Strategies that increase community learning about complex food production issues will certainly help the implementation process.

Conclusion

The way food is produced and distributed will potentially be transformed by the relationship between food and the built environment. For this reason, existing programming requirements for the design of urban spaces stand to be questioned. Even though research figures indicate that food self-reliance is most probably not achievable in the Metro Vancouver area (Bomford 2007), urban agriculture, on a variety of scales as one of multiple solutions, has to be part of an overall strategy for climate change mitigation. Subsequent research is needed to further investigate holistic food systems that integrate farming, public space, green energy, social, and educational components on public land. Professional urban food production - as opposed to individuals growing food for their immediate need or pleasure - requires a policy amendment and/or the creation of a process that allows for integration of urban agriculture on a much larger scale. Business cases, operational standards, and design standards also

have to be established, with public approval actively sought. Landscape architects, planning practitioners, researchers, and educators, all have a significant role to play in the realization of innovative, integrated and physically attractive urban food landscapes; and it is equally important that these skills are developed in relation to the requirements of these challenges. Our tasks include:

1. Creating food systems that are self-sufficient, and take climate change into consideration to help reduce the carbon footprint of cities;

2. Creating food systems that connect the urban core to its periphery, including greenways, and green transportation corridors;

3. Creating urban agriculture spaces that offer supported environments for learning, research, social interaction, and integrate public space to raise awareness through design;

4. Taking on the role of mediator and/or facilitator between multidisciplinary groups, and stakeholders (such as governments, residents, farmers, developers).

References

Bomford, Mark. 2007. *Potential impact of urban agriculture in vancouver: preliminary analyses and discussion points*. Draft document prepared for the Centre for Sustainable Food Systems in the Faculty of Land and Food Systems at the University of British Columbia.

Bornhold, Brian D. 2008. *Projected sea level changes for British Columbia in the 21st century*. http://www.env.gov.bc.ca/epd/climate/pdfs/sea-level-changes-08.pdf (accessed January, 2009).

City of Richmond. 2009. *About agriculture in Richmond*. http://www.richmond.ca/services/planning/agriculture/about.htm (accessed January, 2009).

City of Burnaby. 2009. *Agriculture in brief*. http://www.agf.gov.bc.ca/resmgmt/sf/agbriefs/Burnaby.pdf (accessed January, 2009).

City of Vancouver Planning Department. 2006. *City facts: A quick statistical look at our city*. http://gw.city.vancouver.bc.ca/commsvcs/PLANNING/stats.htm (accessed October 2008).

Duany Plater-Zyberk & Company. 2008. *Southlands - Tsawwassen, British Columbia, Canada*. Charrette Book, May 4-13, 2008.

Holland Barrs Planning Group in assoc. with Lees + Associates. November 2002. *Southeast false creek urban agriculture strategy*. Prepared for the City of Vancouver.

Holland Barrs Planning Group. March 2007. *Designing urban agriculture opportunities for southeast False Creek*. Prepared for the City of Vancouver.

Mullinix, Kent, Mark Holland, Deborah Henderson, Janine de la Salle, Edward Porter and Patricia Fleming. 2008. *Agricultural urbanism and municipal supported agriculture: a new food system path for sustainable cities*. White Paper Submitted for the Surrey Regional Economic Summit.

Natural Resources Defense Council. 2008. *Global warming and our health: Addressing the most serious health impacts of climate change*. http://www.nrdc.org/health/effects/globalwarming-map/gwhealth.pdf (accessed January, 2009).

Pond, Ellen. 2008. *Revealing climate change mitigation in the landscapes of the future - retrofitting residential neighborhoods: A Burnaby case study*. Graduate Project for Master of Landscape Architecture, University of British Columbia.

Porter, Edward. 2006. *Integrating the urban-agricultural edge: An exploration of new ruralism in South Delta*. Master of Landscape Architecture Thesis, University of British Columbia.

Statistics Canada. 2006. 2006 *Community profiles*. Greater Vancouver Regional District. http://www.statcan.gc.ca (accessed in January, 2009)

Taylor, Eric and Darlene Langlois. 2000. *Climate change and the greater Vancouver regional district.* http://www.metrovancouver.org/planning/ClimateChange/ClimateChangeDocs/ClimateChangeImpactScenarios.pdf (accessed in January, 2009)

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