Plotluck

Urban Agriculture in Canada

Olive Bailey + Kate Patterson + Julia Tischer

Power Corporation of Canada Award at the CCA: Summer 2007 Research Residencies

Over the course of three short months in the summer of 2007, we were invited to explore themes related to urban agriculture in Canada. The work we present here would not have been possible without the support and generosity of many. For the opportunity to pursue this project and for guidance along the way, we would like to thank Phyllis Lambert, Mirko Zardini, Alexis Sornin, Giovanna Borasi, Vikram Bhatt and Cécile Martin. We further extend our gratitude to Geneviève Dalpe for her help, to Pierre Boisvert for his interest in our project and for leading us on a tour of the backyard gardens of Petit Patrie, and to all members of the CCA community, both within and outside the Study Centre, with whom we had the pleasure of working and conversing. For taking the time to meet with us and discuss issues pertaining to our respective projects we would like to thank Nik Luka, Leila Farah, Catherine Vandermeulen, Joe Nasr, Mary Gazetas, Arzeena Hamir and Raymond Beshro. Last and by no means least, we thank all the urban farmers who were so kind to welcome us into their gardens.

Plotluck, this collaborative project, is thought of as a potluck of ideas about urban agriculture, made possible through meaningful exchanges with people without whom our experience would not have been as rich.

Most basically urban agriculture is any kind of food, fuel and fiber production within the city limits. However, for the purpose of our collaborative project it was necessary to find a detailed definition that included all our ideas of the term. Luc Mougeot's revised definition of urban agriculture seemed to serve best our purposes. His definition starts a generic description of the building blocks most commonly by scholars:

+Location

+Activities

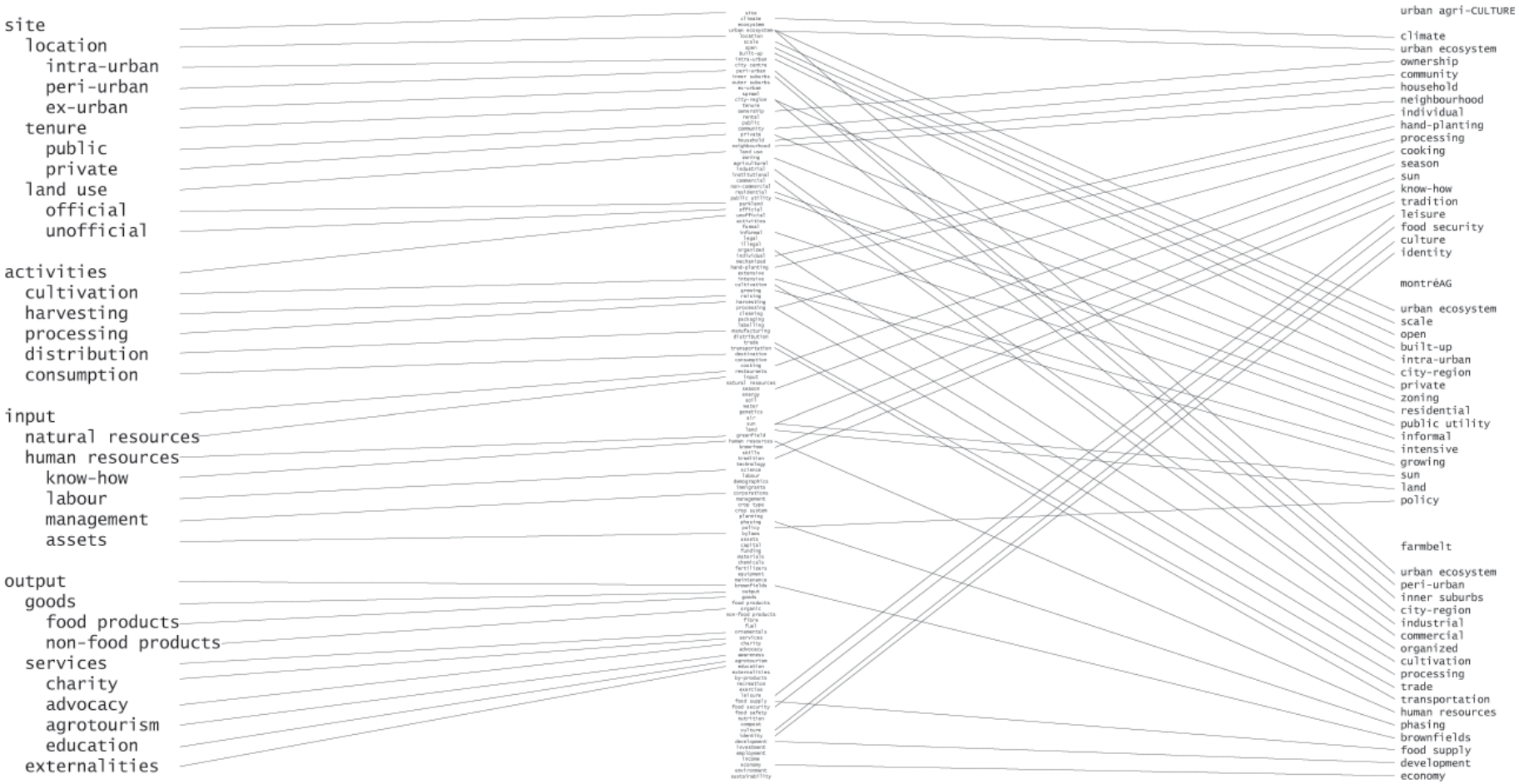
+Products

+Production Systems

+Scale of the Enterprise

According to Mougeot, the most important aspect to be taken in to account when defining the term urban agriculture is the fact that it is embedded in what he calls the "urban ecosystem" (the urban economic and ecological system). It is the integration of agriculture into the urban ecosystem what makes urban agriculture more or less urban.

A diagram resulted from this group processof finding a larger conceptual framewok. From Luc Mougeot's definition, the most basic elements of urban agriculture were identified, listed on the left. This column is seen as the basic skeleton of urban agriculture within which all three of our individual projects fit. The items of the basic skeleton were then carried over into the middle column, which becomes fleshed out with the specific ideas and themes that urban agriculture can include. This crowded list of subtopics is meant to illustrate the daunting range of ideas that urban agriculture encompasses.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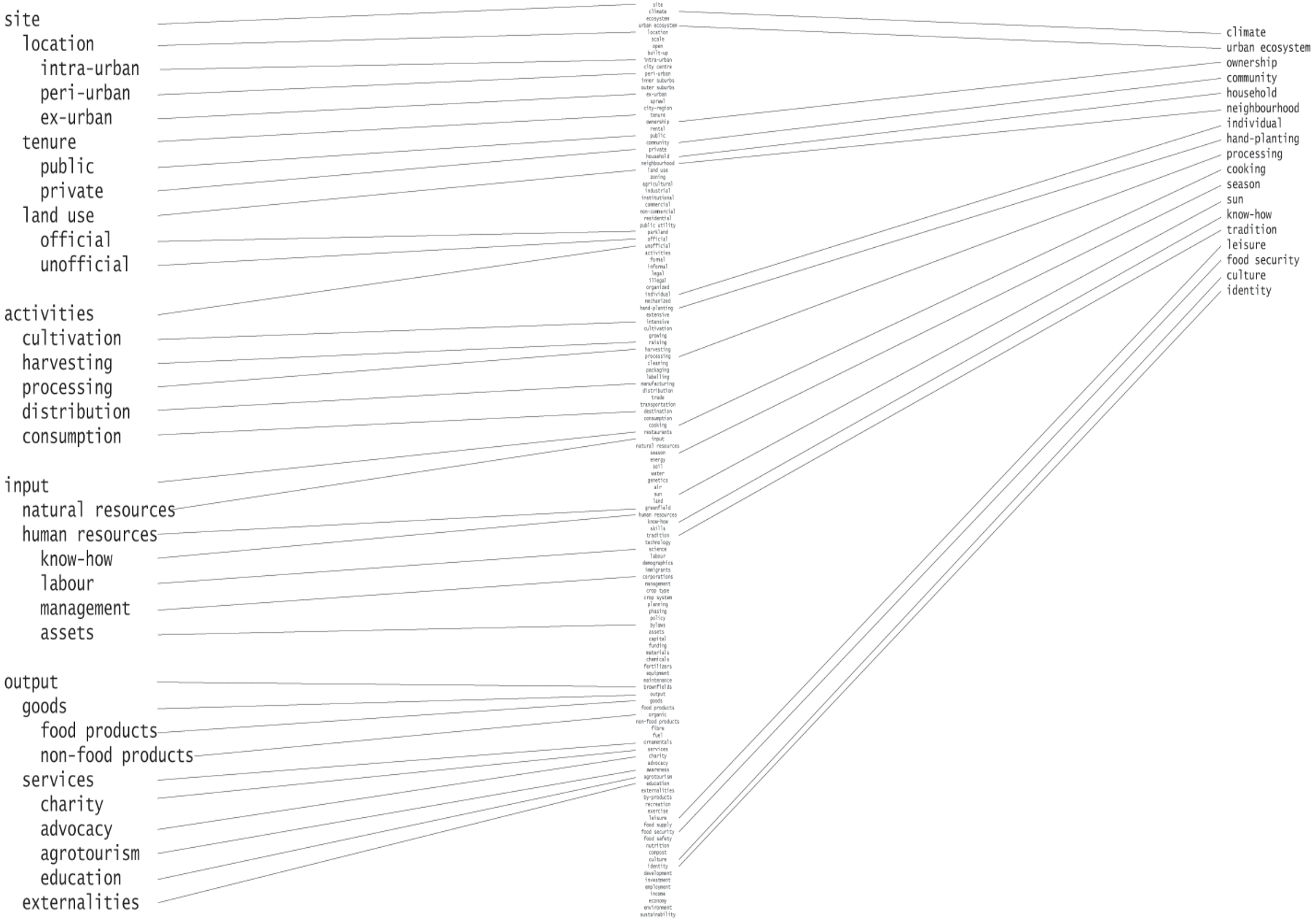
Urban Agricultura

Urban Gardening in Montreal's Italian Backyards

Julia Tischer

Power Corporation of Canada Award at the CCA: Summer 2007 Research Residencies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Urban Agriculture is a symbiotic process between urban dwellers and their city via activities associated with planting, growing, breeding, raising, gathering, storing, harvesting, processing and marketing food, or fuel on urban land. Citizens respond to local urban conditions and opportunities according to individual or collective aesthetic visions, agricultural techniques and/or cultural beliefs and meanings, and the city is supplied in return with human and material resources, outputs and services altering the urban form, the use of urban space and the way in which citizens perceive it.

Understanding Urban Agriculture

Urban Agriculture (UA) grows in vegetable and fruit gardens in urban backyards, pots with herbs on balconies or in community gardens, where city farmers and gardeners enthusiastically weed their plots while chatting with neighbours about shared realities; today's beautiful weather, the magnificent wedding of the youngest Bozetto and (sometimes) politics. The harvest takes uncountable shapes, from nutritious vegetables and fruits and wool to ornamental flowers and fuel. UA may be processed for added value, and then sold in local markets, after which it is consumed by urbanites in form of a refreshing gaspacho maybe, just like grandma used to prepare it.

UA is a network structured by complex threads of processes, intentions and methods within the urban environment. But it is this complexity of intertwined elements anchored into the real world and everyday life experience of ordinary people, which makes it versatile, appropriate and adaptable to many different urban contexts, making UA an activity practiced worldwide. This activity is has not only been adjusted to infinite urban contexts, it has also been adapted in time, to the constantly changing circumstances in our growing cities. Urban agriculture is probably as old as our cities themselves.

The importance of defining and specifying UA is stressed by Luc Mougeot, who points out that the development of the concept will help to understand this phenomenon and make it accessible and operational to users. Building blocks most commonly used by scholars to define UA, fall under categories that describe its location, activities, products, production systems and the scale of the enterprise. Interestingly, all typologies of analysis, with the exception of location, could be applied to Rural Agriculture as well. But it is not the location that distinguishes UA from Rural Agriculture; Mougeot argues that it is rather its condition of being embedded within the urban system and its

Image Source: Natural Resources Canada, National Air Photo Library. Montreal, Quebec 1930

http://airphotos.nrcan.gc.ca

interaction with it that can explain the real dimensions of UA, and proposes a revised definition of the term UA:

"UA is an industry located within (intra-urban) or on the fringe (peri-urban) of a town, an urban centre, a city or metropolis, which grows or raises, processes and distributes a diversity of food and non-food products, (re-)using mainly human and material resources, inputs and services found in and around that urban area, and in turn supplying human and material resources, outputs and services largely to that urban area." [1]

Mougeot writes that, "Agriculture will be more or less urban, according to the extent to which it will use the urban eco-system and in turn will be used by this same urban eco-system," who clarifies the term urban "ecosystem" as "the urban economic and ecological system". Although Mougeot brings the discussion to a more sophisticated level and asserts to recognize the importance of interrelation between the city and UA, his definition of urban "ecosystem" is not complete. He clearly identifies two elements within it, the economic (human) and the ecological (natural), but he ignores to include the social, political and cultural factors into the human component, which have great significance when exploring the relationship between UA and the city. For the purpose of this paper, I will refer to his term urban "ecosystem" as the urban human and ecological system.

1. Luc J.A Mougeot, "Urban Agriculture: Concept and definition", International Development Research Centre (IDRC), Cities Feeding People Programme, Ottawa

Ethnic Landscapes

Ethnic diversity is a significant feature if one tries to describe Montreal's urban landscape or any other mayor Canadian urban center. Much like in 20th century's first decades, immigration is currently increasing Canada's population and cultural diversity. Today, the number of immigrants arriving to Canada from different parts of the world is higher than it has ever been. But unlike immigration in earlier decades, the vast majority of newcomers today are settling in the larger Canadian cities, instead of moving to the countryside. This is especially true for Montreal, Toronto, and Vancouver.

Little Italias, Chinatowns, and other neighborhoods might be recognized in these cities as nodes where spaces are shared by people with common nationalities. But more than nationalities, immigrants share common ethnic backgrounds that distinguish them from other groups in the larger Canadian society that are closely tied to memories brought from homeland experiences. What we are is strongly influenced by our past experiences, our interests and perceptions, and how we include our memories or deliberately exclude them from our daily narratives. Art historian and sociologist Anthony King states that as we "move between different towns and cities, or different countries… we read one place through our latent memories of the other. We take our ideas with us."[2]

Memories of home are also reproduced by immigrants as a statement, a way to create landscapes of resistance, in response to dominant environments as we learn from Joseph Sciorra's work on the Puerto Rican "casitas" built by immigrants in New York City. These landscapes are shaped by means of the replica of memories, through which a new collective ethnic identity is created. According to Sciorra, "The casita is similar to scrap books and quilts in that builders piece together disparate objects into a meaningful whole in order to reclaim a lost world and fix it in our consciousness. This ensemble of recycled materials and memories stands as a kind of physical autobiography

"Many chose to see new through old eyes, developing a landscape that combined both [memory and experience] in distinctive ways."[3]

Dell Upton in Ethnic Roots that Built America

Image Source: Foreign Affairs and International Trade Canada "Signs of Change," Photo: CP (Steve White)

http://www.international.gc.ca/canada-magazine/issue25/02-title-en.asp

2 King, A. D., Ed. (1996). Re-Presenting the City: Ethnicity, Capital and Culture in the 21st-Century Metropolis. New York, NY University Press.

3 Upton, D. (1986). America's Architectural Roots: Ethnic Groups that Built America. Washington D.C. , The Preservation Press.

composed by immigrants of a specific generation who share similar life experiences." [4]

But more than landscapes of memory it are the landscapes of experience the most important means by which immigrant ethnic groups create connections to new spatial contexts and different cultures, and ultimately transform immigrants' relationship to the city. According to architectural historian Dell Upton, experience is constructed through experiential encounters of immigrants' daily lives in a new setting (climate, topography and resources), through which memories are blend in a variety of proportions. In his book about America's architectural ethnic roots he writes that, "In their first years here, many immigrant ethnic groups did reproduce some of what they had known at home, because that was all they knew. But as they grew familiar with the new environment, society and economy, they adjusted to their setting (…) Many chose to see new through old eyes, developing a landscape that combined both in distinctive ways."[5]

Human geographer Lisa Law's explains experience and adaptation in her analysis of Filipino women in Hong Kong. [6] She describes the multi-sensorial experience through which domestic workers from the Philippines gather, eat traditional Filipino food, and take over the symbolic landscape of Central on Sundays. A corporate space used exclusively by Chinese businesspeople on weekdays becomes a landscape that evokes memories of the Filipino homeland and conquers a space on their shared free day of the week. Central turns into a space that shows Filipinas perception of their new realities, a landscape produced through original ways of creating links and adaptation to a different context of urban life. Law states that "are the geographies of Hong Kong-based Filipino identities-ones that allow domestic workers to be involved in the production of cosmopolitan culture abroad."

As much as ethnic landscapes can be reconstructions of treasured traditions or cultural adaptations through collective experience in new environments, "Other ethnic expressions are brand new." (Upton) One example of these "invented traditions" is the use of two kitchens in first generation Italian homes in North America, studied by Lara Pascali. [7] Through the analysis of this practice, which is not as prevalent in Italy as it is amongst Italian immigrants, Pascali studies ethnic landscapes in which immigrants articulate themselves to circumstances in the new world. Furthermore, Pascali supports the relevance and reality of ethnic landscapes when she states that "Ethnic landscapes certainly exist if we consider ethnicity not as static or pre-determinated notion, but rather, a term that is mutable, adaptable and an active force, set apart from notions of authenticity and tradition. In so doing, it is possible to envision an increasing multicultural city (…) where all ethnicities (…) are influenced by each other, recreated and emerging in new forms which, like language, are increasingly bound up in each other. It is in these forms of cultural interaction that ethnic landscapes come alive."

4 Sciorra, J. (1990). ""I Feel Like I'm in My Country": Puerto Rican Casitas in New York City." Perspectives in Vernacular Architecture 34(4): 156-168.

5 Upton, D. (1986). America's Architectural Roots: Ethnic Groups that Built America. Washington D.C. , The Preservation Press.

6 Law, Lisa, Home Cooking in Howes, D., Ed. (2005). Empire of the Senses: The Sensual Culture Reader. Oxford, NY, Berg.

7 Pascali, L. (2004). Two Stoves, Two Refrigerators, Due Cucine: The Italian Immigrant Home with Two Kitchens. Architecture. Montreal, McGill. Master of Architecture.

If UA depends on the relationship that this practice has with the human and ecological urban systems, it seems to me that an appropriate way to study it are the activities in which people employ UA in their daily lives. In this report I want to explore the strategies used by people to link UA to the city, giving closer attention to the situations in which urban farming is used by first generation immigrants in the city of Montreal to answer these questions. I argue that urban gardens are means by which important relationships between immigrants and their new environments are developed, helping processes of socio-cultural integration by bridging ethnic realities with the urban fabric. Furthermore, UA is a vehicle through which symbiotic relationships between immigrants and the city are established.

This study looks at the evidence of human interactions related to UA found in ethnic landscapes, locating itself in the backyard gardens in Little Italy, carefully looked after Italian immigrants. These relationships not only tell stories of shared seasonal and cyclical traditions and ritual customs brought from abroad but used them to depict the ways in which people recreate, adapt and invent their relationship with the city. Landscapes are particularly useful for this specific study because they are catalysts of human realities that show human socio-cultural circumstances and relationships of humans with their environments over time. Human landscapes are an appropriate source of self-knowledge, according to Lewis, because it is "our unwitting autobiography, reflecting our tastes, our values, our aspirations, and even our fears."[8]

8 Lewis, Pierce F. "Axioms for Reading the Landscape: Some Guides to the American Scene" in D.W.Meining, Ed. (1979). The Interpretation of Ordinary Landscapes: Geographical Essays. New York, Oxford University Press.

9 Cosgrove, D. E. (1998). Social formation and symbolic landscape Madison, Wis., University of Wisconsin Press.

"Landscape constitutes a discourse through which identifiable social groups have historically framed themselves and their relations with both the land and with other human groups… this discourse is closely related to epistemically and technically to ways of seeing…" [9]

Dennis E. Cosgrove

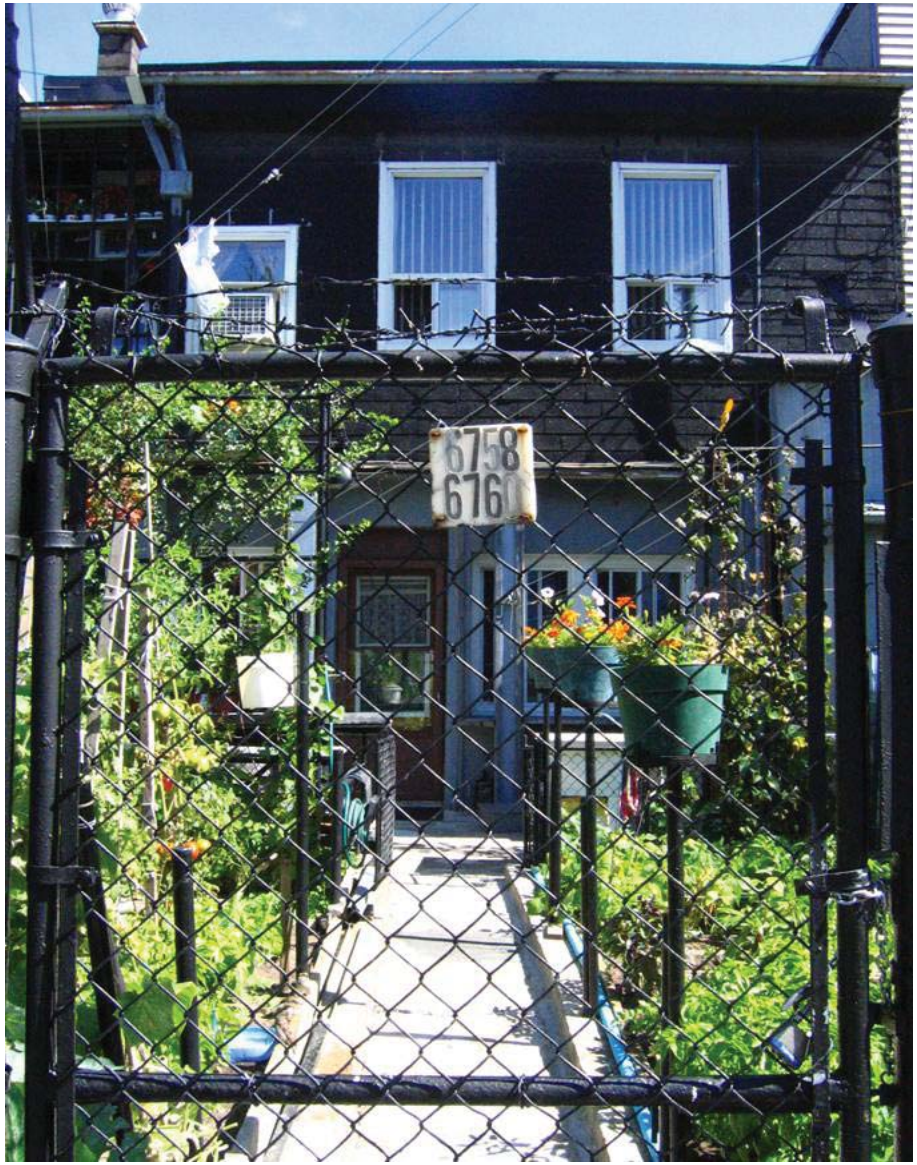
The Italian Backyard Garden

Little Italy in Montreal shares numerous common characteristics that clearly differentiate this neighbourhood from the rest of the city. Its vital spirit has become identified as a place shaped by "Italian traditions", as people commonly refer to the recreated customs brought by Italian immigrants during the first decades of the 20th century and after the Second World War. Although "Little Italy" has become more and more multicultural over the past decades, this neighbourhood is still home to first generation Italian immigrants.

Italian immigrants arrived to Montreal with the aspiration for a better future, a life of freedom and prosperity. The first task that recent immigrants underwent was to build a home. As Pascali explains; "Building a home was work, but work that Italians took immense pride in; it was a self-representation: an expression of who they were, where they came from and what they aspired to be; an expression of their values and of their achievements, and of the process through which they got here." 10

The importance of the home explains the great value that home ownership had to first generation migrants of Italian origin. They underwent the hard work to renovate their own homes and fitting them out with spaces that fulfilled personal and cultural requirements of practicality and convenience. Facades were provided with elaborated ornaments displaying acquired prosperity and basements were "finished" and converted into a common meeting place for Italian-Canadians. Still today basement kitchens are spaces where sausages and tomato sauce are cooked, family dinner is served and intimate Italian parties are celebrated with close friends and relatives.

But on my first bike ride to Jean Talon Market, one feature of Italian American's way to arrange their homes struck me the most. The large number of vegetable gardens in backyards seemed almost magical that late summer evening. Tomatoes,



In casa sua, ciascuno e re - Everyone is a king in their own home

Italian proverb cited by Lara Pascalli

basil, eggplants and even fig trees were growing in "neatly cramped" backyard plots. In one or the other garden a dense grapevine grew shade for a table and chairs. But gardeners weren't sitting there; in most of the gardens people were busy watering their plants and chatting with neighbours over the fences.

As I learned later, the practice of planting fruits and vegetables is common in Italian Montrealers' backyards. Throughout Little Italy, first generation Italian immigrants persistently tend their gardens every year. These gardens constitute an important part in this particular landscape, and not only reflect models established and accepted by the community but also express personal preferences. Moreover, the elements of the Italian vegetable garden and the interactions that occur within these spaces create important networks by which Italian gardeners establish connections with the city. By reading the patterns by which immigrants design and use their gardens is a way to better understand how Urban Agriculture defines and transforms the relationships between the city and the people that live in it.

10 Pascali, L. (2004). Two Stoves, Two Refrigerators, Due Cucine: The Italian Immigrant Home with Two Kitchens. Architecture. Montreal, McGill. Master of Architecture.

Distinctive Elements of the Italian Garden

Italian vegetable gardens are three dimensional creations, commonly constructed with similar elements. Related design patterns showing a common cultural identity exhibited collectively through these spaces. In Little Italy the gardens start at the rear door of the house which leads to an always perfectly tidy sitting area. These treeless landscapes are frequently shaded by a grapevine growing on a wooden structure that, depending on the season bares green or purple fruits. Usually chairs are arranged in a row against the wall of the house, all facing the vegetable garden. Right where the hard floor of the sitting area ends, the vegetable garden grows in every inch of the plot. Interestingly, very few gardens include a lawn.

Tomatoes are the most predominant crop found in Italian backyard gardens. Tomatoes are planted where they receive the most sunlight, which is commonly right in the center of the gardens. One can see the rows of naked stakes in the early summer, neatly standing about 50 cm from each other, waiting for the vines to grow. Frequently tomato plants constitute the largest share of the gardens. On contingent beds gardeners arrange pepper and green onions, sometimes celery. At the laterals of the lot grow green beans, zucchini and eggplants, which are plants that grow fuller, and would take away the light (and focal importance) from the tomatoes if planted elsewhere.

A fence situated at the edge of the garden divides the crops from a back lane or ruelle many of the Italian backyards share the access to. Unlike in other areas of the city, where impenetrable wooden enclosures are common, these fencings are frequently made of a transparent material as wire, giving the gardens an open space feeling. One gardener suggested that this is done to prevent unwanted shade to fall on the garden. A straight pathway crosses right through the garden connecting the gate that leads to the back lane with the sitting area next to the backdoor of the house.

Italian vegetable gardens grow in multiple vertical layers. Vines grow above the sitting area, maybe 2 meters above ground. Another layer is constituted by tomatoes and other plants like pumpkins that climb up the stakes provided for this purpose. On the bottom layer of the garden grow small plants like herbs and lettuce commonly used in by Italian immigrants.

“Many people have gardens where they plant vegetables; they are all old people who came from Italy and still plant the way they used to before.”

Man in charge of the depaneur close to Dante Park

Cultural preferences manifest themselves in the way that plants are arranged and also in the selection of crops. Some of them are "traditional" Italian crops that do well in Montreal, such as basil and tomatoes. But perennials that usually do not tolerate northern climates are stubbornly -and proudly- grown by gardeners as well. One meaningful example is the iconic fig tree, repeatedly found in Italian backyard gardens. I was told that many Italian immigrants grow fig trees as they are symbol of longevity and prosperity.

A number of techniques are used to maintain a fig tree in Montreal. Some are kept potted and can be consequently brought indoors easily when temperatures drop in the fall. Other gardeners transplant their precious trees twice a year in order to keep them from freezing in the winter. They are kept in an unheated garage or storage area after they drop their leaves and go dormant, and brought back into the garden in the early spring. However, the most common strategy amongst Italian gardeners is burying the trees. Dead leaves are removed, and branches are pulled inward and tied together. A large trench is dug on one side of the tree, deep enough to free the roots, and then the tree is put down. It is insulated with straw, newspaper and plastic bags before it is covered with soil.

But taking care of the trees is only half of the hard work. Gardeners are not the only ones harvesting figs: "My figs are eaten by birds even before they are ripe!" In some cases, small plastic bags with holes are put around each fruit to protect it from birds and bugs, as the fruit will get sweeter if allowed to hang on the tree longer. For many gardeners however, these procedures are annoyances that are not worth the effort. One gardener told me, commenting on his neighbour's fig tree:

"I once had fig trees too; I had three of them when I first came here. But it became too much work because on November 1st it is necessary to dig a hole and put the tree down, and cover it so that it doesn't freeze during the winter…All for two fruits…"

Surprisingly, he has put all his effort in making his garden as comfortable as possible for birds instead. "I love birds," he says.

Self-identity is manifested in the garden decorations often found in Little Italy's vegetable gardens. Flowers, colourful paper butterflies and aluminium plates are strategically used to embellish the backyards and to safe vegetable gardens from intruders such as racoons and cats. Through these arrangements in the vegetable garden, Italian Canadians show their intimate side more comfortably, revealing personal aesthetic choices and even cooking and food preferences. Each backyard garden is a system through which each gardener represents themselves in Montreal's landscape.

"See? The garden is nice."

Proud gardener, who lives with his parents in Little Italy

Autumn – Concerto in F Major

Allegro

"Celebra il Vilanel con balli e Canti
Del felice raccolto il bel piacere
E del liquor de Bacco accesi tanti
Finiscono col Sonno il lor godere"

Antonio Vivaldi

Garden Cycles: From the Inside Out

Gardens are a way to represent ethnic identity, not only by the elements and design patterns by which they are composed. Ethnic landscapes change and adapt with the garden cycles that occur within Montreal's seasons. These seasonal cycles bring Urban Agriculture into various spaces in the domestic realm and out into the streets, changing its meanings constantly as it changes from one season to the other. In these processes of Urban Agriculture, the Italian Canadian cultural image and its relationship to the city are defined.

As Montreal's growing season is very short compared to European seasons, Italian Canadian gardeners frequently increase the growing time by starting the seedlings indoors. This procedure gives gardeners time to their advantage, as the seeds have already germinated and are ready to grow in the garden after the last frost of the year. The cycle of a garden starts in the interior of the house, somewhere next to a window, as one gardener told me. She plants her seedlings in April, when the soil outside is still frozen. The first period of the cycle evolves into the next after the first frost, when the garden is designed and filled with seedlings during the first part of the year. In the spring, the garden cycles also go further out of the backyard and into the Jean Talon market. One gardener confessed that he buys the seedlings at the herb stall where he buys very good basil in June, ready to be planted.

As it flourishes over the warmer summer days, the garden transforms into a source of pride and joy. Italian Canadian gardeners not only cultivate vegetables in their gardens, but relationships. The social experience of being able to share the passion of planting and harvesting food makes the garden a vehicle by which ties with neighbours and friends are strengthened. Networks are weaved across the individual plots, over the fences, creating not only social but also spatial connection between the gardens and their

gardeners. One woman explained in her garden planted with a huge amount of tomatoes, that the tomato sauce she makes of her harvest is enough that she can keep enough for the winter and even to give away as presents to her neighbours.

The seasonal cycles of Urban Agriculture have impacts in the neighbourhood but also influence the intimate family circle. As vegetables ripen, they are taken inside the house, and used to prepare different kinds of recipes. Afterwards the food is stored in a cantina, a pantry like room next to the basement kitchen. One has to read the way Italian immigrants relate to food in its context of middle class families that did not have much to eat in post war years. As food was extremely scarce for many, it became very important to have food stored once it was available, for uncertain times to come. Italian families relate the abundance of food directly to celebrations or Sunday dinners. Food means to share time with the loved ones around the basement table, to share moments that later become shared memories and experiences.

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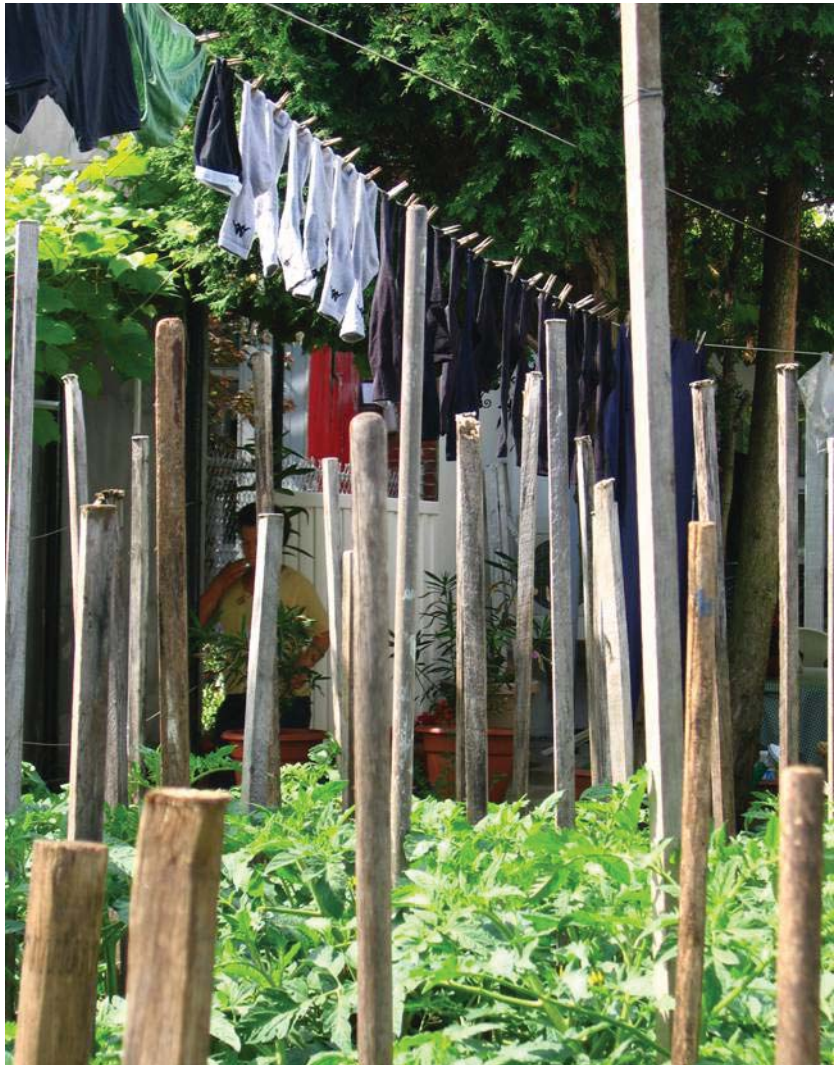


"I harvest many tomatoes, so many that it is enough for the whole winter. I even give tomato sauce away to my neighbours."

Italian woman in her garden, with many rows of tomatoes

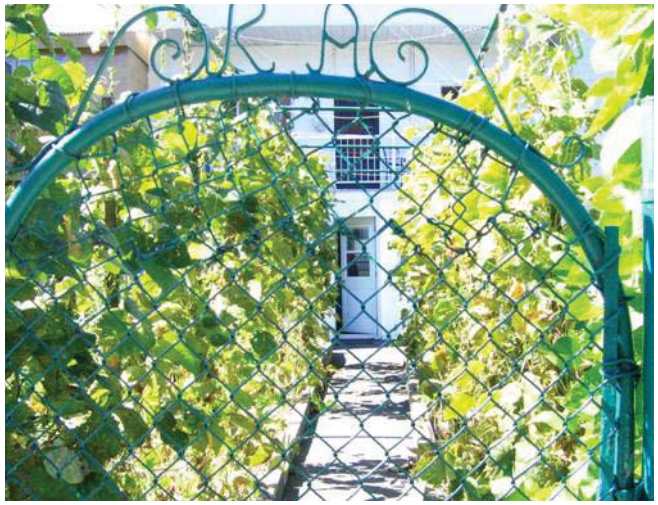
Sequence of Spaces: From the Outside In

When analyzing the spatial relationships that Urban Agriculture creates, it becomes useful to look at the front of the houses where Italian Montrealers live. Usually, Italian facades are embellished with decorative materials, altars and ornamental flowers in the front yards, where religious beliefs and prosperity are presented to the public. These elements in the front of the house separate the interior and the exterior spaces of the house, showing their more planned identity to outsiders.

During my walks through Little Italy's back lanes, it became quite evident that this narrow space had a very different character. In contrast to the front of the house, the backyard gardens are directed to a rather intimate audience. This feeling of privacy starts with the change of scale provided by the back lane. These treeless landscapes where the gardens lay between transparent fences and clothing lines reaching the opposite buildings, give the impression of a space that belongs to one same interacting system. The decorated gates, most of them with the initials of the family, the arrangements in sitting area in front of the backdoor, the different ornaments in the gardens, make these much personalized spaces.

None of the gardens has a bell to announce oneself standing in front of the gate. But this does not seem necessary, as Italian immigrants are extremely aware of visitors coming through the back yard. This became evident to me when I was taking pictures from the back lane into the gardens. I did not get to stand there for more than three minutes. Soon somebody would stick their head out of the back door and come to open the gate welcomingly, to invite me for a cold coffee.

Lara Pascalli explains in her research about the use of two kitchens in the Italian American home, that "When visiting, people in the family know not to knock at the main entrance in the front of the house, but come in through the back,



“Figlia bella!”

Gardener opening the back gate to let me in

side or garage door, whichever leads most directly into the basement." In Little Italy, the visitor has to walk through many contingent and overlapping layers before reaching the intimate side of the Italian immigrant home. The visitor has to walk into the back lane, open the back gate and then cross the garden and the sitting area. These layers of spaces become increasingly intimate in character as one gets closer to the house.

The back yard gardens can be interpreted as spaces that move from the inside out, extending the cultural and familiar identity of its owners from the interior of the house into the garden and into back lane. At the same time, the contingent layers of the back yard garden blur the boundaries between the inside and outside through its continuous interconnected elements and spaces.

Gardens of Experience

When I asked the gardeners what motivated them to plant the gardens in the way they do, one proud gardener answered enthusiastically:

"I came to Canada in 1967. Before I came here, our family had big fields where we planted everything. I know how to plant and my garden is good every year."

It is evident that most gardeners feel connected to the act of planting through their memories from Italy, as most gardeners came from farmer families that used to sustain themselves through agriculture. The gardens show adaptations of these memories and skills from rural circumstances onto a new urban context. Italian immigrants saw the backyards that Montreal offered them as an opportunity. The layouts and techniques to care for these gardens are not only linked to memories and knowledge brought from Italy but display inventive mechanisms to reinvent a Italian Canadian ethnic identity in a new environment. In the collective process of creating their homes, Italian Canadians created spaces that are representations of their memories, enhanced by new communal and individual experiences, tailoring their ethnicity to the circumstances that Montreal offered. The huge backyards were recognized as an opportunity to create new spaces of their own.

As a result of Italians constructing their spaces with effort and ingenuity, relying on their reinterpretations of their homelands, Italian gardeners enjoy the reputation of impressive landscapers and gardeners. The cultural identity that Italian Canadian garden represent, is recognized by citizens. These gardens are included and accepted as important pieces of Montreal's multicultural landscape. They make part of it.

Cultural meanings imprinted within the Italian garden, created through Urban Agriculture, are reinterpreted and understood by other Montrealers for their own purposes.

As I was walking down the back lanes in Little Italy I could see the influences of the Italian gardens in the live little Montrealers. Two children were enjoying the life that has emerged in the back lanes as a result of these interconnected spaces. Their street art in form of chalk drawings were perfect additions to the networks created by Italian gardeners, completing a perfect back lane composition.

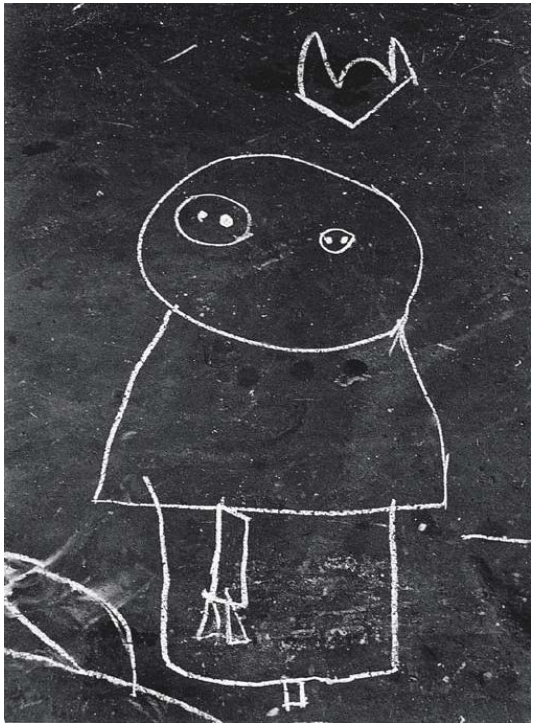


Image Source: Helen Levitt, "In the Street: chalk drawings and messages, New York City 1938-1948" (1987).

11 Upton, D. (1986). America's Architectural Roots: Ethnic Groups that Built America. Washington D.C., The Preservation Press.

"Experience permits choice. Ethnicity is cultural, not generic. It consist of ideas that people learn form one another, and these ideas can be expressed or not according to individual choice. Some people prefer to ignore their ethnic ties, while others' experience creates a desire of self-assertion and the strengthening of bonds. They protect cherished traditions in the face of change. Other ethnic expressions are brand new." [11]

Dell Upton

Bibliography

Borasi, I. b. G. (2007). Environ(ne)ment: Approaches for tomorrow

Bressi, P. G. a. T. W. (1997). Understanding Ordinary Landscapes. New Haven and London, Yale University Press.

Chong, B. S. a. D., Ed. (2004). Site unseen : laneway architecture and urbanism in Toronto. Toronto, Faculty of Architecture, Landscape, and Design, University of Toronto.

Cosgrove, D. E. (1998). Social formation and symbolic landscape Madison, Wis., University of Wisconsin Press.

Cromley, E. Invitation to Vernacular Architecture.

D.W.Meining, Ed. (1979). The Interpretation of Ordinary Landscapes: Geographical Essays. New York, Oxford University Press.

Hayden, D. (1995). The power of place : urban landscapes as public history Cambridge, Mass., MIT Press.

Howes, D., Ed. (2005). Empire of the Senses: The Sensual Culture Reader. Oxford, NY, Berg.

Isaacson, R. T. (1985). Gardening: A Guide to Literature. New York, London:, Garland Publishing Inc. .

Jackson, J. B. (1984). Concluding with Landscapes. Discovering the Vernacular Landscape. Y. U. Press. New Haven.

King, A. D., Ed. (1996). Re-Presenting the City: Ethnicity, Capital and Culture in the 21st-Century Metropolis. New York, NY University Press.

Levitt, H. (1987). In the street : chalk drawings and messages, New York City, 1938-1948 Durham, NC Duke University Press for the University's Center for Documentary Photography.

Levitt, H. (2005). Slide show : the color photographs of Helen Levitt / photographs by Helen Levitt ; foreword by John Szarkowski. New York, powerHouse Books.

Lowenthal, E. C. P.-R. a. D., Ed. (1986). Landscape meanings and values. London, Allen and Unwin.

Pascali, L. (2004). Two Stoves, Two Refrigerators, Due Cucine: The Italian Immigrant Home with Two Kitchens. Architecture. Montreal, McGill. Master of Architecture.

Sciorra, J. (1990). ""I Feel Like I'm in My Country": Puerto Rican Casitas in New York City." Perspectives in Vernacular Architecture 34(4): 156-168.

Sungu-Eryilmaz, R. G. a. Y., Ed. (2004). Recycling the city : the use and reuse of urban land Cambridge, Mass., Lincoln Institute of Land Policy.

Teyssot, G. (1999). The American Lawn. New York, Princeton Architectural Press.

Upton, D. (1986). America's Architectural Roots: Ethnic Groups that Built America. Washington D.C. , The Preservation Press.

Vergara, C. J. (1999). American Ruins New York Monacelli Press.

Vikram Bhatt and Rune Kongshaug, e., Ed. (2005). Making the Edible Landscape: A Study of Urban Agriculture in Montreal. Montreal, Minimum Cost Housing Group, McGill University.

Wolschke-Bulmahn, J. D. H. a. J., Ed. (1993). The Vernacular Garden. Washington D.C., Drumbarton Oaks Trustees for Harvard University.

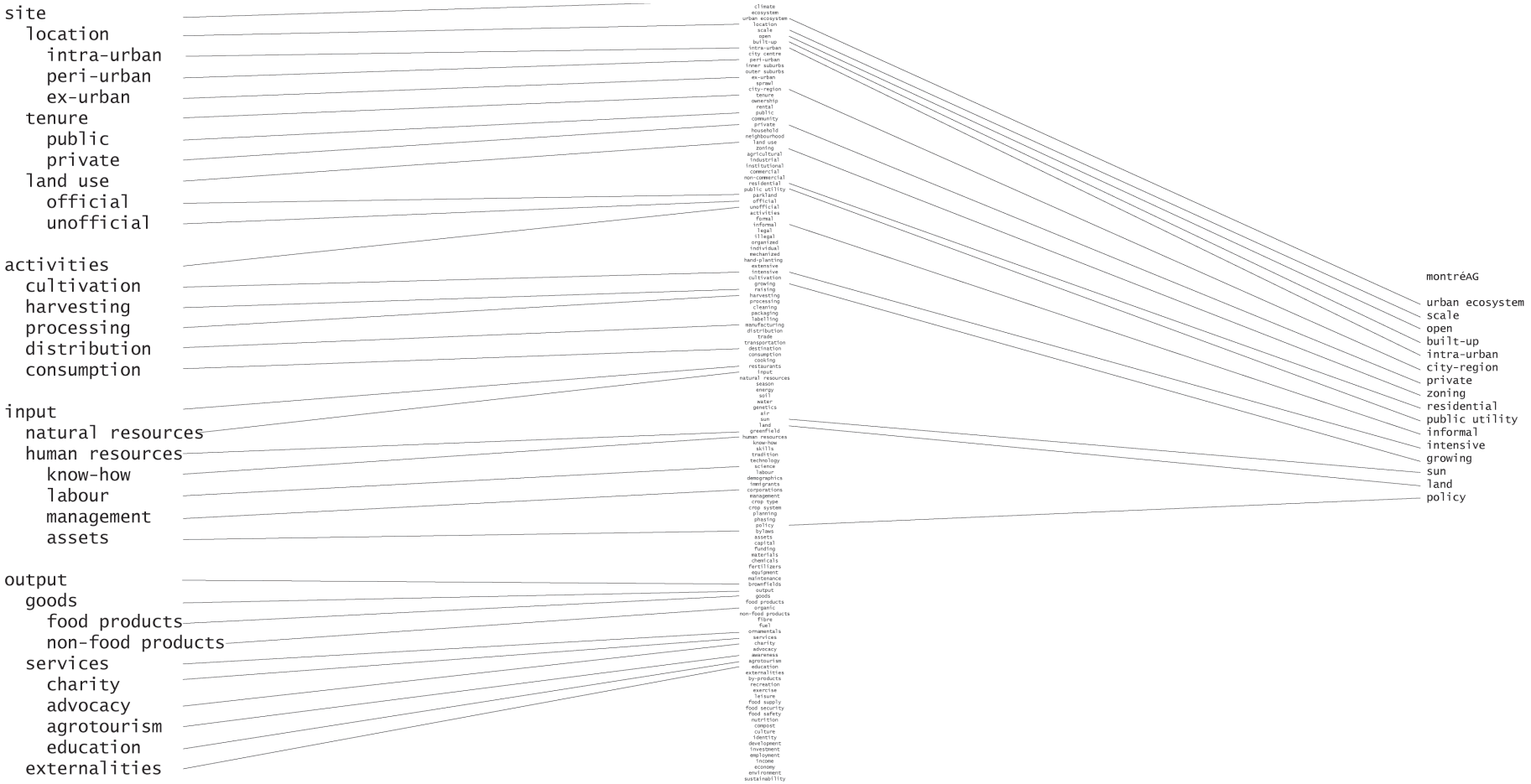
Young, M. A. W. a. M. J. (1995). "Grammar, Codes, and Performance: Linguistic and Sociolinguistic Models for the Study of Vernacular Architecture." Perspectives in Vernacular Architecture 5, Gender, Class, and Shelter: pp. 40-51.

Zardini, M. w. e. b. W. S. e. a., Ed. (2005). Sense of the city: An alternate approach to urbanism. Montréal Canadian Centre for Architecture.

Montreag

A field guide to UA in Montreal

Olive Bailey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Urban agriculture (UA) is a formal or informal household or community level activity driven by practical, cultural or ideological concerns, which encompasses acts involving the local intensive cultivation as well as consumption of food and non food products as shaped by the opportunities and constraints of the prevailing urban form and infrastructure.

The definition at the beginning of this section describes the case of urban agriculture for Montreal and many Canadian cities in the present day and historical contexts. It differs from Luc Mougeot's internationally accepted version in that it asserts the centrality of individual agency in the face of the particular conditions imposed by the urban environment in which lives the individual. Urban agriculture is an activity whereby actors attempt to meet their needs for food, fiber, fuel, fun and sometimes power in an environment that has been and continues to be commodified, engineered, regulated and policed by man. Despite, being the collective work of a society, modern urban landscapes are often inhuman. This is the city as industrial. This is the city as imposing machine. UA is both the product of and the response to the physical urban environment which has evolved over time. Through gardening, the urban dweller is able to exert partial control and effect at least temporary change on the urban space he or she inhabits. In short, the relationship between the city and its inhabitants as seen through the practice of UA is one whose expression is both one of submission and dominance in both instances (1).

Furthermore, the above definition more expressly addresses the reality of physical urban spaces in which urban agriculture is necessarily carried out. This is critical as the type, availability and uses of spaces significantly influences the productivity, intensity, permanency and sustainability of agricultural practice in the urban setting. By considering the spaces in conjunction with the people who inhabit them, it can become possible to understand why certain forms of UA occur where, when and how.

(1) Park, Robert, Ernest W. Burgess and Roderick D. McKenzie. The City. Chicago: University of Chicago Press, 1925.

Purpose

The intention of this project was to study how urban agriculture is inserted into the urban landscape as a response to the constraints and opportunities provided by the urban landscape of the Montreal region. This line of questioning led to the creation of a typology of UA informed by the characteristics of the urban fabric and function of the UA practices encountered. Of deepest interest are the manifestations of the informal, unplanned and unregulated domestic food garden and its relationship to the physical infrastructure of the city. This project presents the first steps toward a spatial, typomorphological analysis of the private food gardens of Montreal and concludes with a local example of the surprisingly productive opportunities for UA created alongside a transport and utility corridor in Montreal's west end.

Methodology

The lens used here is principally that of urban morphology in the vein of M.R.G. Conzen and Gianfranco Caniggia (2) who underline the importance of understanding the processes of formation and transformation of the urban fabric at scales ranging from the individual building to the territory or region. For Conzen (3), the urban fabric is readable in the pattern of land use, land values, land and building tenure, the nature and functioning of physical structures, public utilities, housing, transportation and communication facilities.

The principal tools of investigation used here were informal interviews, visual analysis and documentary photography much of which was performed as part of a handlebar and dashboard tour of Montreal. These tools were especially useful for analysis at the district, block and parcel scales. Larger-scale analysis employed town plans and maps, both current and historic, local development histories and some basic mapping of urban form.

(2) Moudon, Anne Vernez. 1994. “Getting to Know the Built Landscape: Typomorphology.” Reproduced in. Urban Design Reader, 1st edition. Edited by Michael Larice and Elizabeth MacDonald. London ;New York :Routledge,2007.

(3) Conzen, M.R.G. “A framework for the comparative study of townscapes, in relation to the concepts of region and environmental complex.” In Thinking About Urban Form: Papers on urban morphology 1932-1998 M.R.G. Conzen edited by Michael P. Conzen. New York: Peter Lang Publishing, 2004.

Urban + Agriculture

Urban = urbs

urbs: derived from a Roman convention whereby citizens would ritualistically plough around the walls of a new city, likely a military and defense strategy as well as an agricultural role to this zone. Without even addressing the second word of the term UA, the etymological root of the word urban connotes a strong link and nested spatial relation between crop production and the city proper.

In the traditional sense, "urban" relates to the definition of settlement in an instance when cities were fortified and cities borders well defined. The walls of Ville Marie were torn down in 1801 and populous and productive burgs had already popped up outside the fortified city severely compromising the idea that the city was limited to what was contained.

Agriculture = ager + cultus

ager: field, itself a landscape characterized by the natural behaviour of grasses such as in South West Asia.

cultus: taking care deliberately.

History and Urban

Urban agriculture as it is carried out today is but an extension of a long history of settlement. As pointed out by Connie Guberman (4), urban and rural uses were integrated with the form of many early settlements, and certainly most of the major ones, being determined by their relationship to cultivable land. The size and density of the population, and therefore of the city, would have been determined by the food supply, itself limited by natural resources.

(4) Guberman, Connie. "Sowing the Seeds of Sustainability: Planning for Food Self-Reliance" in Change of Plans: Towards a non-sexist sustainable city. Toronto: Garamond Press, 1995.

The days before wheeled transport and reliable roads would have also had huge implications for the shape and arrangement of a settlement as crops would have had to be within walking distance of the residents. Furthermore, before a serious surplus would have been possible to enable the community to support artisans and others not directly involved in food growing, this ease of access to cultivable land would have been a necessity for all community members.

Rather than framing UA as a new phenomenon, we should consider the practice as one of the inherent conditions of urban life. This is not to say that, since the start of city-building, the conditions that inform the way we live in cities have not changed considerably and that the ways in which food production is linked to urban dwellers has not changed along with them.

It would be foolish to not recognize the impact of industrialization upon the city and agriculture. Industrialization represented a major paradigmatic shift for the cities of the world leading to concentrations of people at much greater densities. Heightened building densities, scarcity of land resources within the city, and a series of improvements in farm, transportation and storage technologies progressively diminished the everyday connection of many city people with the production of their food and non-food resources. It is not to say that agriculture was completely squeezed out of the urban fabric, but the fabric changed considerably in this time along with lifestyles. Instead of the city being more or less limited by the agricultural yield achievable in and around it, agricultural production began to become limited by the city, both in form and activities.

Urban in opposition

To truly understand the breadth and diversity of urban agriculture, one must tread very carefully when defining what is urban. In truth, most common definitions and connotations of urban are not terribly fruitful. It is used most often when considering something urban in opposition to the other. As pointed out by Ernest W. Burgess (5), "cities have a long history of being non-agricultural. This urban-rural dichotomy is a convenient yet oversimplified division of human activities." By considering the city as a dynamic and evolving entity, Burgess and Robert Park presented one of the first models of urban growth wherein city expansion occurs in progressively larger concentric rings encircling the core.

(5) Park, Burgess and McKenzie, 1925.

Though the division may not always be clear-cut, we arrive at the modern split between urban and suburban landscapes that can be divided along lines of street layout, travel distance and mode, lot size, residential density and monotony. Elsewhere there is the distinction between peri-urban and urban landscapes where we consider urban everything within the outline of the city and peri-urban that which lies on the edge in the transition zone to the rural area. This leads us to the oldest comparison of them all, the conflict between urban and rural, which conjures seemingly great distinctions along the lines of economic activity, land uses, settlement densities and manners. Though the characteristics of the urban landscape and economy may be clearly defined in contrast to those of the other entity in each example given above, when we move from one opposition to the other we note that what is considered urban in each is quite different in terms of its inclusiveness. For instance, when comparing urban versus rural landscapes areas considered suburban are readily lumped in with what would be considered clearly urban in that other discussion.

Of courses the contemporary Canadian city which is nested not simply in a physical location, but in an intricately woven global economic system as well is slightly harder to define by its purely physical patterns. Instead, the city should be understood as a functional whole, itself continually evolving under the influence of local and distant actors and systems. The city is itself a social organization (6) characterized by the relationships between population, density of settlement, and the heterogeneity of residents and or group life. As Ali Madanipour (7) points out, the intersection of a diversity of players inherent to the social city creates a highly compartmentalized urban fabric due to forces and processes of political, economic and cultural social exclusion. Understanding the many levels of interplay in the social realm is thus critical to understanding urban space in the built environment and how this interacts with everyday practices (8). Investigating the physical and social landscapes of these different urban spaces and the variations between and within them, can provide insight into the types of spaces available to the urban farmer.

(6) Wirth, Louis. Urbanism as a Way of Life. Chicago: Chicago University Press, 1964.

(7) Madanipour, Ali. "Social Exclusion and Space" from Ali Madinapour, Goran Cars, and Judith Allen (eds), Social Exclusion in European Cities: Processes, Experiences, and Responses. London: Jessica Kingsley Publishers, 1998.

(8) Hillier, Bill, Julienne Hanson and John Peponis. 1987. “Syntactic Analysis of Settlements.” Architecture et Comportement/ Architecture and Behaviour 3 (3): 217-231.

Montreal's UA Region

Defining the region is a problem of scale. In the case of Montreal and other Canadian cities, political boundaries can be misleading in defining the urban entity. If municipal boundaries were ignored and the landscape looked at from the categories of density of settlement, population, and even heterogeneity, we would find that density takes on a mottled aspect with high density areas and corridors extending out of and pushing up against what is formally City of Montreal property. Not only do building and population density extend outside these bounds, but so do activities and flows of products, information, and people.

The flows of factors of production highlight the interconnection and interdependence of the city with an area much greater than its physical and political bounds. As explained by urbanists such as Jane Jacobs' (9), the region is composed of the city and its hinterland. As political and economic forces shift, this region changes shape, the city sourcing its materials from ever-changing locations and networks. Thus, region is not only composed of the various shades of urban environments discussed earlier, but by intangible flows as well.

While functionally and virtually the Montreal region may be linked to Paris, Chile, China and James Bay, these places are far too distant and removed from the topic at hand to include them in the bounding of the region. The definition of the Montreal region must take into account one of the fundamental characteristic of UA: UA is local, in terms of both distansce and time. The UA region can therefore be rather loosely defined by acceptable and feasible commuter distances and travel times. Thus, we get an urban agricultural region resembling the Montreal Census Metropolitain Area and regional transportation service area (10).

(9) Jacobs, Jane. Cities and the Wealth of Nations: Principles of Economic Life. New York: Vintage Books, 1985.

(10) The regional transportation infrastructure is often used to negotiate the eedge of the periubran zone around the city as pointed out in Mougeot, Luc. 2006. Growing Better Cities: Urban Agriculture for Sustainable Development. http://www.idrc.ca/en/ev-95369-201-1-DO_TOPIC.html. International Development Research Centre. [Accessed 13 August 2007].

UA constraints

"Space with power. What words could better describe a garden? The space is self-evident. The power, they say no man has ever fully measured. It is a wonderul combination of sun, rain, and the invisible forces of the soil. This power is already to be turned on. All it needs is men who are skillful enough to guide it."

Dora Williams (11)

There are many factors working against the practice of urban agriculture in Montreal. Some of these limit the economic potential of urban agriculture as well as its contribution to municipal and regional food security. Others simply undermine the activity as a household or community activity.

(11) Williams, Dora, 1911 quoted in Henning, John. 1997. "Join the Ecological Solutions Roundtable Cities Feeding People: An Overview." Ecological Agriculture Projects. http://eap.mcgill.ca/CPUG1. htm. Prepared for Cities Feeding People: A Growth Industry, IDRC Development Forum. [Accessed 19 July 2007.]

A UA Typology for Montreal

UA does not include all forms of agricultural production. Large-scale industrial agricultural production for export out of the region does not qualify as UA even if is done in proximity to the city. Discretion between types of production does not rest on the basis of commercial character or profitability, level of mechanization or production system, but rather on the basis of flows within, into or out of the city. The factors exchanged may may be products, services, labour or consumers. Fundamentally, the flows must represent a direct relationship between the place of production and the end consumer. This relationship is evident in each all categories of the typology presented in this section. The economic realities surrounding types suggests different segments of the income distribution patronizing different classes of UA.

UA finds a wide spatial distribution throughout the Montreal region. Though there is a great variety of types that overlap in the different urban zones, some patterns do emerge as a result of the constraints and opportunities presented by the urban environment. These patterns are apparent at different scales of urban morphological analysis. As one scales down from a regional analysis down to a parcel level analysis, the characteristics of increasingly smaller, more intensive forms of UA are revealed. The ordering of the typology is an attempt to represent this spatial distribution of these organizational classes as one zooms in from the region and its typically rural and periurban zones to the intraurban.

The techniques employed in the above organizational forms of UA vary widely. The physical, spatial and biological adaptation of agricultural systems by the urban farmer to their site, as a function of their means, engenders an array of morphotypes.

Agrotourism

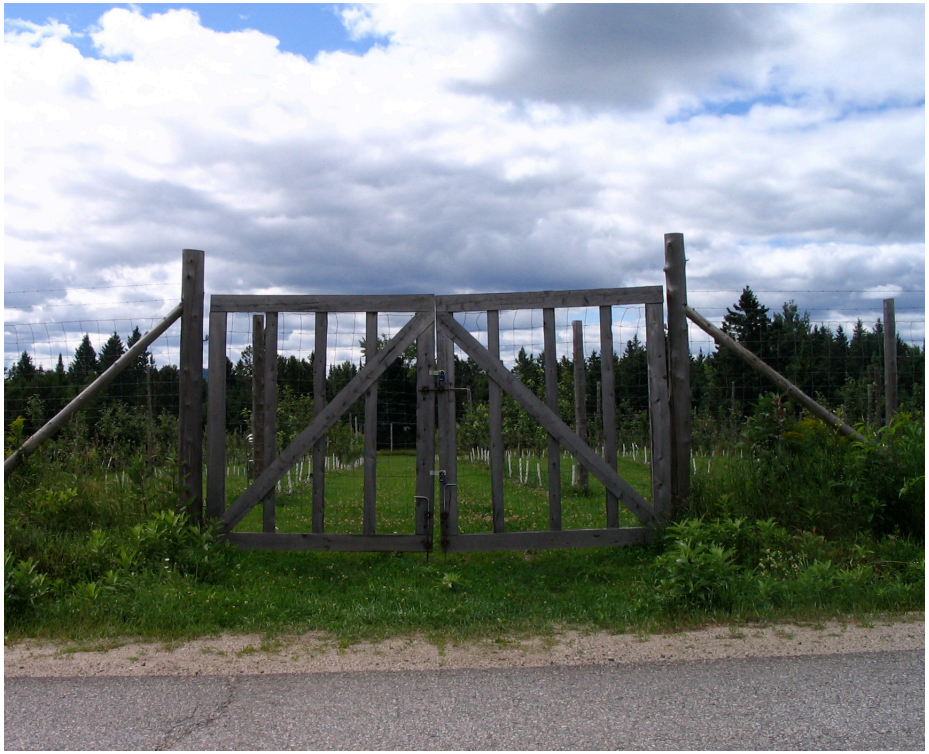
Purpose: profit; regional employment; connect local consumers and producers; regional revitalization; promoting agricultural and cultural heritage.

Location: peri-urban and rural areas located in the regional agricultural zone of Montreal; some municipal parks previously run by the Communaut Urbaine de Montr al.

Actors/Agencies: Minist re de l Agriculture, des P cheries et de l Alimentation, le Groupe de concertation sur l agrotourisme au Qu bec, Tourisme Qu bec et la Table de concertation agroalimentaire des Laurentides, F d ration des agricotours du Qu bec and its member entreprises, R seau des Grands Parcs.

Operational Characteristics: participating farms run certified programs ranging from gourmet dining, selling and demonstrating the production of traditional regional farm goods, farm tours, pick-your-own produce operations and farm stays.

Link to the city: (sub)urbanites from Montreal go to the country to consume the experience of agricultural life and the fruits of local agriculture. Instead of bringing agriculture to the intraurban zones it brings the urban dwellers to the agriculture.



Community Supported Agriculture (CSA):

Purpose: develop local organic food production; promote human health and environmental protection; profit; connect local consumers and producers.

Location: peri-urban and rural areas located in the regional agricultural zone of Montreal.

Actors/Agencies: Minist□re de l□Agriculture, des P□cheries et de l□Alimentation, □quiterre, various organic and biodynamic certification organizations, farmers, citizens.

Operational Characteristics: mechanized and manual production of fruits, vegetables, herbs, eggs, honey or meat that is certified organic or biodynamic, or in the process of becoming either or. Participating consumers become "partners" in a farm by prepurchasing a share of the season's harvest and sometimes volunteering their labour. Participating farms deliver baskets of fresh produce to a drop-off point in the neighbourhood each week. Food baskets are delivered from mid-June to mid-November. A variation on CSA is the market farmer who cultivates a relationship with clients at the point of sale, usually a farmer's market near the farm or at one of several planned markets in the city.

Spatial Structure: farms range in size, however subdivision of lands is limited by the Loi sur la protection du territoire et des activit□s agricoles. Structure and layout of the farm depends on the type of production. In relation to the city, farms are mostly located off island, though a few are located in the Southwest of the island. Linkages to the city are through the flow of goods and money, more than physical location.

Link to the City: knowing the preferences of the communities they work with, CSA farmers tailor their cropping choices. Different farms service specific areas in the region.

Demonstration Garden

Purpose: agricultural experimentation and extension; environmental and social education.

Actors: NGOs, City of Montreal, educational institutions, citizens

Location: peri-urban areas and urban, often on institutional land.

Operational Characteristics: demonstration gardens often double as collective gardens although they are more aimed at outreach and public education rather than horticultural training and life-training for participants. Demonstration gardens host public events and workshops and are often focused on the development or experimentation with new gardening techniques.

Tenure: land may be owned by organization, leased or borrowed. Land usually belongs to the City or institution and is often zoned as parkland or agricultural land.

Community Garden

Purpose: recreation; community development; food security.

Actors/Agency: City of Montreal, private institutions, public institutions, citizens.

Location: urban areas; 97 community gardens on the island, mainly in highly urbanized and marginalized residential areas.

Operational Characteristics: citizens apply to the Montreal Department of Recreation, Parks and Community Development and pay an annual fee for the use of a plot. Soil, manure, fencing, water, tools, toilets and sheds are provided by the City as are horticultural animators. Maintenance is provided by the Public Works Department. Participants buy into insurance provided in the City program.

Tenure: paying members have rights of use however the land belongs to the City or an institution.

Spatial Structure: the community garden is composed of collection of individual plots and common areas used as gathering places, restroom facilities and tool storage. The whole complex is surrounded by a fence with a locked gate. The plots which are 3m x 6m are accessed by a main passageway measuring 3m in width and separated from each other and accessed by secondary passageways measuring 30 cm in width. Gardeners must grow at least five different types of vegetables. Flowers can be grown in common areas along the fenced borders.

Collective Garden

Purpose: community and social programming; food security.

Sub-Types: neighbourhood collective garden; social rehabilitation program; garden share programs; adopt-a-tree.

Location: highly urbanized areas of Montreal

Actors/Agency: Action communiterre, quiterre, co-quartier, Alternatives, Loco Local, institutions, Carrefour jeunesse-emploi, Ressources humaines Canada, Carrefour Bio Local Emploi, citizens.

Operational Characteristics: gardens are not managed as separate individual plots, but as a commons. Cultivation is a collective effort and the harvest is distributed among participants and other end consumers along proportions that vary by initiative. There is usually some horticultural training provided to members often in the area of organic agriculture. Projects are commonly run in partnership between environmental and local food security organizations.

Tenure: varies. collective garden groups may rent or buy land together. Sometimes institutions donate the use of some land or space.

Guerrilla Garden

Purpose: personal production of mainly foodstuffs, political statement

Actors: individuals or groups

Location: vacant or underutilized spaces in urban and peri-urban areas.

Tenure: No legal tenure. Gardeners are essentially squatters.

Private Garden

Actors/Agency: individuals and households, businesses

Location: urban, peri-urban and exurban Montreal, at a wide variety of scales that often relate positively to distance from urban center.

Tenure: individuals have a right to use the space or land either through ownership of the land, possession of the land or formal or informal servitudes or arrangements.

Spatial Organization: UA as practiced by private citizens can be a highly personal act. Clustering of food gardens is common. Vegetable crops are usually kept separate and in a separate patch from ornamentals. The vegetable patch is usually located in an area with more direct sunlight than the ornamental bed and far from large trees that compete for water. Common features include a garden shed and compost bin and shed. Because of the frequent spatial proximity to the compost and once again for shading reasons, this garden is often found at the far end of the lot from the residence. For vandalism, pest and theft reasons, this garden is often surrounded by fencing, which is either chicken wire or chain link.

Analysis

Informal and Unplanned Clustering

"The real issue is not whether sites should be planned but rather how systematic and extensive that planning should be."

Kevin Lynch (12)

(12 Lynch, Kevin. Site Planning. 3rd Edition. Boston: The MIT Press, 1984.

More often than not, urban agricultural production is a private, household affair, rather than an issue of the State. While the handlebar and walking tours of different areas of Montreal and analysis of satellite imagery do expose many domestic gardens, it is safe to say that many private vegetable patches are invisible to the outsider. Nonetheless, unplanned clustering of UA can be readily apprehended. Some neighbourhoods are distinctly green and not because town planners and developers laid them out with UA in mind.

One reason to explain this seemingly organic clustering is the ghettoization of ethnic and social groups more inclined toward the activity in a given neighbourhood. Where these people gather in communities, food gardens of the type investigated here flourish. Where private open space is limited, community and collective gardening initiatives may be established. In some areas, the practice of UA may spread beyond the needs of the social group as contact with green-thumbed neighbours leads to inevitable borrowing of practices by local residents from outside the cultural community. This would explain the clustering of urban agriculture morphotypes and cropping systems.

However, there is more to the spatial dynamics of UA than just socio-cultural characteristics of given neighbourhoods. The cost of housing and proximity to downtown are undoubtedly strong factors. However, the Montreal region has a variety of affordable housing options. Furthermore, general trends for a neighbourhood do not necessarily explain the presence of food gardens on certain lots or blocks. At the beginning if this chapter it was posited that urban dwellers make use of what space they have by adapting UA to that space. However, though some adaptation is always required, individuals and households can exercise choice in selecting their place of residence. For some prospective home buyers and renters, the agricultural potential of the parcel is a factor in this selection. What then are the features of the urban form that influence this agricultural potential?

The town plan

Though not the case of all municipalities in the Montreal region, town plans are a relatively recent acheivement (). Much of the fabric and form of the region was not created as a result of an overarching town plan, but following economic logic, historic convention and some only some central control in the form of bylaws. The picture is further complicated by the fact that the region was and continues to be made up of many distinct municipalities with their own histories and regulations. The cities and neighbourhoods were certainly not planned as communities to host UA.

Nonetheless, certain elements of the urban form that affect domestic UA are the direct result of public planning, spending and policy.

Land uses and zoning

It is the role of municipal government to manage the city and its inhabitants. The instruments of the planning profession- plans and zoning, bylaws and guidelines-have direct and indirect effects on the practice of UA. In Montreal, UA has, by many accounts, been quite successfully institutionalized through the community garden program run by the City. Contrary to the case of city-sanctioned community gardens in Toronto and New York, the Montreal gardens are protected from development through special zoning. There is official community garden zoning for 13 garden sites. 22 gardens are situated in city parks. Spatial distribution of community gardens is managed by the City, which tends to locate gardens in more marginalized communities. An indirect impact of the City program has been to decrease the prevalence of guerilla gardens in the city at least in areas where community gardens have been established. In its recent sustainable development plan, Montreal discussed the potential use of land found within hydroelectric corridors as sites for UA.

"In the affairs of men, there always appear to be a need for at least two things simultaneously: freedom and order."

E.F. Schumacher (13)

(13) E.F. Schumacher, 1974 quoted in Henning, John. 1997. "Join the Ecological Solutions Roundtable Cities Feeding People: An Overview." Ecological Agriculture Projects. http://eap.mcgill.ca/CPUG1. htm. Prepared for Cities Feeding People: A Growth Industry, IDRC Development Forum. [Accessed 19 July 2007.]

Indirect impacts of zoning on urban agriculture relate to the siting of conflicting uses and general design requirements of certain forms of development. Thus, institutional, industrial and commercial land uses are often cited so as to decrease negative externalities related to noise, traffic and pollution that might affect neighbouring residential uses. Though meant to create livable residential areas by segregating uses, areas built prior to zoning policies or that do not follow typical zoning logic can sometimes create spaces suitable for UA. Other municipal plans and regulations inadvertently create niches for urban agriculture. In attempting to limit the noise, dust and potentially fatal conflicts of activity in train corridors, municipalities lay other infrastructures along the same corridor to create buffers between residential uses and industrial and public utility uses.

Bylaws and Guidelines

While there are bylaws and actions taken by municipal government that relate directly to UA, others have indirect impacts on the spatial dynamics of UA. In Montreal West, late 19th century design guidelines and regulations regarding the minimum dimensions of rooms and the facade treatments veritably priced the municipality out of the means of socioeconomic groups most likely to perform UA. Public tree policies that protect old trees limit the possibilities of front yard UA due to shade conditions. Borough bylaws dictating the dimensions of domestic compost bins and where on the lot they can be located, which may have some bearing on the location of the vegetable garden.

Infrastructure

Infrastructure leads development. In Montreal, infrastructure corridors and the networks they form are the backbone of this city and have been since Dollier-Casson first laid out the streets of Ville-Marie (14). The network of waterways, roads and rail laid out for military, commercial, industrial and residential access have shaped the distribution of land uses and urban form.

Roads

Where once, the trade and defense routes of the island of Montreal connected forts and their settlements to nearby farms, the system of rangs and cotes established the lines for the characteristic elongated street grid of most of Montreal. This grid was designed by settlers so that the farms would all benefit from access to a water source by being aligned perpendicularly to the nearest river. Thus, much of the cityscape assumes its characteristic orientation of streets, for the most part in a

(14) Marsan, Jean-Claude. Montreal in Evolution: Historical Analysis of the Development of Montreal's Architecture and Urban Environment. Montreal: McGill-Queen's University Press, 1990.

southeast to northwest direction. Other gridiron streets are oriented differently in order to align themselves with bends in waterways. In addition, arterial streets are found main thoroughfares, many of them lined with residential units located alongside commercial establishments, as well as the conspicuous forms of the elevated, graded, and below-grade highways.

Quite unlike the pervasive gridiron of streets, some old and new suburban streets are more curvilinear. The curvilinear system is planned by subdivision developers and has the preferred choice of roadways because it is cheaper than the grid and also limits traffic on residential streets by incorporating curves and cul-de-sacs. The type of residential street layout has important consequences for UA, especially when housing density and building density are taken into account.

The shape and orientation of the blocks are largely due to the street network. The long narrow residential blocks defined by the grid reveal underlie a variety of streetscapes. Buildings may form solid borders to the street, with or without setbacks, or, the building aggregates may be more broken up into standalone apartment blocks, or semi-detached or detached houses. Curvilinear layouts with or without cul-de-sacs tend to be associated with more fragmented building aggregates and more green space overall. One of the biggest differences in terms of UA, is that the curvilinear system gives rise to irregularly shaped parcels. The interplay between the effects of street width and building height and blocking can result in more or less sunlight reaching the facades and yards of residences. Also, different street types can present different opportunities and constraints for streetside UA. Tree-lined boulevards present problems, however sidewalks create an automatic setback of the building aggregate from the street, thus allowing more sun exposure.

Rail

Before the suburbs reached from the core of the city of the Montreal to outlying villages and towns, the railroads were laid to criss-cross the island and transport people and merchandise on and off the island. Greater Montreal grew around the rail lines, radiating out from stations and gradually filling in the landscape thanks to extensive, paved road networks and alternative modes of travel. Railroads influence development on a more micro-scale as well by anchoring other public utilities and by influencing the arrangement of land uses in their vicinity. Generally, industry and commerce have been located directly adjacent to rail lines to benefit from access to transport and in order to act as a buffer between the transport corridor and residential and institutional uses.

Public Utility

The utility corridor, in its broadest sense, can take many forms. Here it will be considered as a service right of way. Services can take the form of hard infrastructure, such as hydroelectric lines, or a service, such as garbage pick-up. The utility may be above ground, such as some telephone lines, or buried as in the case of sewers. It may also be managed by the city or by crown or private corporations. In terms of the impact on land uses, buried and above ground systems limit the size, type and construction of new buildings either because existing infrastructure does not have the capacity to absorb new demand that would be generated, or because maintenance access must be maintained to the corridor and cannot be obstructed. In addition to buildings, vegetation may be controlled in these areas to reduce interference and maintenance costs. Often, the size of the right of ways is related to the dimensions of maintenance equipment. Thus, back alleys were built wide enough to accommodate coal delivery and garbage pick-up.

The Block and Parcel

In many Canadian cities, the residential lot is the location of the most urban food production. The spatial arrangement of the lot and the relationship of the building structure to open space play a determining role in the type, size, shape and siting of the outdoor food garden. The parcel provides the most fine-grained element of this analysis. However, to truly understand why UA should appear in one way or another on a specific lot owes much to the relationship of the parcel to the block that contains it.

Block:

Because urban agriculture occurs mostly on residential land, the focus here is directed toward the residential block. Makes sense to look at the block because it is what occurs between the streets and infrastructure. Furthermore, much of Montreal was built by developers on a block by block basis. Therefore, variations in physical features of blocks may occur between blocks such that one is more propitious for UA than another.

Block equals aggregation of buildings, in this case residential or institutional, surrounded by streets or adjacent to other land use districts. For the purposes of understanding the siting of urban agriculture in Montreal, it is important to consider both the features of the block itself and the relation of buildings and structures contained in that block to each other. In Making the Edible Landscape, these issues are touched on and the ratio of built area to open space is deciphered for three communities. The tightness of the fabric as created by the size of the block and the height and intensity of the building on it have important consequences for the amount and quality of open space available for domestic food gardens. Sometimes the features of adjacent blocks may also have an impact.

The block is important because it exerts a strong influence on the characteristics of the parcel or lot, which represents another

layer of typomorphological analysis, one at which the agency of the individual and household are more prominent.

Orientation

The orientation of buildings vis a vis the open space of the parcel is of utmost importance when considering UA practices making use of natural light. Convention in Montreal is to hide the vegetable patch from the street. This convention likely derives from several factors. For one, kitchens are usually located toward the back of the house. As such, it is most convenient to locate the vegetable patch toward that side of the building. Furthermore, the back yard provides some protection against vandalism and theft of produce by other people. Third, cultural biases most likely attached to social status and a western European ideal, push the very utilitarian, common and unsightly vegetable patch to the back, the front and side yards often being reserved for landscaping, ornamental gardens and lawns.

In dense residential areas such as the Plateau, Petit Patrie and Mile End where private yards are limited in extent and not accessible to many of the tenants it is not uncommon to see food plants in the front yard. In these areas it is not unsafe to assume that front yard vegetable gardens are the property of first generation immigrants, largely of Mediterranean provenance, who do not have the correct conditions for UA in their back lot. Though in all cases, the back yard is the preferred location for the vegetable garden, lack of usable space and sunlight will push avid gardeners to move to the front.

Ideally, for outdoor UA, open space should be south facing and the orientations of the building are best if they avoid a deep band of shade up against the house. Of course, the orientation of individual buildings is dependent on the size of the lot and the density of development. Individual building orientation is always constrained to some extent by street layout as well as by neighbouring buildings. Where the north face of a building is

dedicated to uses such as parking and storage, more usable space is available for food production on the south face. Alexander writes that private lots should be laid out such that they are longer north to south with houses situated on north side. The diagonal layout of the grid over most of the island makes this particular orientation difficult as most buildings assume an orientation perpendicular to the street.

Where open space area is restricted on N-S streets and the desire to grow food is strong, that open space that is west-facing seems to boast UA more than the east-facing space. This is most clear in front yards. From what can be gathered from back alley tours, backyards of houses with both orientations may host vegetable gardens if the space is deep enough and opaque fencing is absent.

Parcel Size

Among other factors, residential lot size in the Montreal region varies with the era of development, type of housing and to some extent, distance from the core. While the size of the parcel is important, what matters most for UA is the amount of open space available once the footprint of the building is taken into account. While the building itself may present surfaces for UA, the largest domestic UA plots are located outside, on the ground.

In Sheffield, England, Smith, Gaston, Warren and Thompsonreported that yard size was positively correlated with diversity of land cover composition in domestic open spaces. Larger yards were more likely to contain trees taller than 2 meters, vegetable gardens, and composting sites. As yard size decreased, unvegetated landcovers such as paved parking spaces and patios made up a greater proportion of the available area. Both parcel size and shape are a function of block form and building fabric.

Relative Parcel Location

Where building density is high and the space between buildings is narrow or non-existent, houses located on the corner lot benefit from more open edges. This, in turn, equates to greater sun penetration and therefore better conditions for UA, than in the case of parcels located within the block.

Another consideration is the relative position of the parcel with respect to other open space, be it industrial, institutional, commercial, public or other residential. Large parking lots, expanses of lawn and school yards maintain sun corridors that may reach the domestic parcel and make even a mid-block yard a favourable spot for UA.

Open Space Distribution

In describing the new suburban landscape, Hillier, Hanson and Peponis underline the paramountcy of hierarchy and privacy. As a matter of preference, urban farmers seem to favour locating domestic vegetable gardens in the rear yards. This, of course, requires sufficient space and that the back yard meet certain other conditions as well.

Space along the side of the house in lower density housing blocks can also present opportunities for UA. If there is sufficient sun exposure, planting crops along the side of the house may offer excellent microclimatic conditions such as shelter from wind and heat emission.

Housing density

Housing density, in terms of floor area ratio, can have different outcomes in terms of residents' access and use of land and open space. Access and use are not just dependent on physical proximity and ease of movement, but upon legal tenure and conventions or legislation surrounding appropriation of commons. Residents in high density buildings and blocks may more readily run into NIMBYism which arises when certain land uses become nuisances to neighbouring residents. The presence of

a composting unit that emits odours or attracts local wildlife is prime fodder for the latter.

Housing type

Informal vegetable gardens appear in relation to a wide variety of housing types: apartment complexes, row housing, duplexes, triplexes and quadruplexes, semi-detached and single detached residences. Because of the wind and sun shadow effects produced by large apartment complexes as well as issues related to access, length of tenure and vandalism, vegetable gardens are rare on common open space of such structures. Furthermore, the tall, central-corridor slab commonly used in apartment building design is the most difficult structures on which to support private balcony or window box production as each unit typically has only one orientation. At a more minute level, the features of the individual building can influence the shape of the shadow band if the roof line is irregular. Elsewhere, external structures can create more open space to be used for UA. The flat roofs common in working class neighbourhoods of Montreal are marveled at for their apparent ability

Case Study: Informal Gardens in a Montreal Corridor

Corridors present interesting opportunities for urban agriculture. Because the function of the corridor requires that it be continuous, the landscape forming the corridor is not subject to as much fragmentation. Buildings, which are often the most limiting obstacle to a continuous landscape, are limited to the boundaries of the corridor. Furthermore, for safety and maintenance reasons, building and digging are not allowed within the setback. By minimizing building in the area, direct access is maintained and wide expanses of open land are created. As long as the utility is not obsolete, the expanse is preserved. On the other hand, obsolescence may have opened up the back alley to urban agriculture by decreasing traffic through these passages and increasing the privacy of the back yard plot.

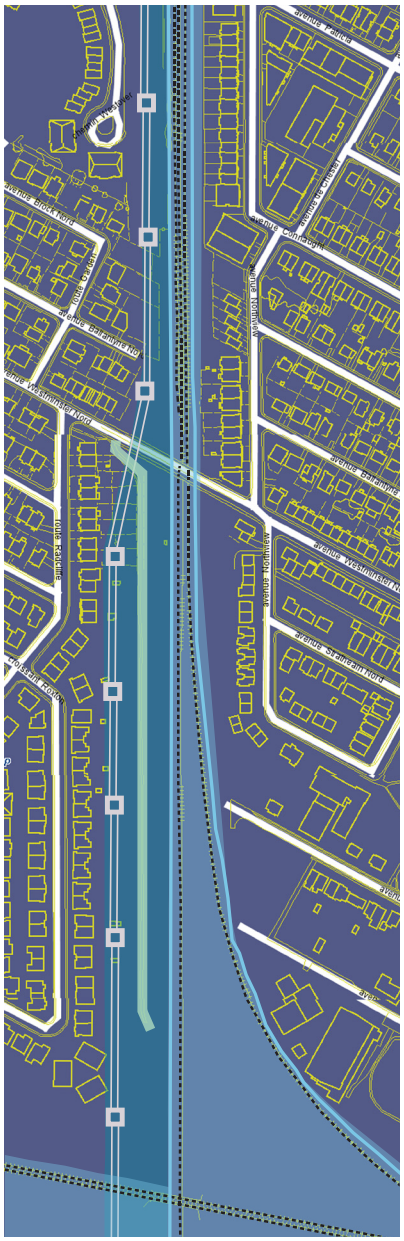
What is more, the land buffering the corridor is often maintained by the agency in charge, which limits competition from overgrowth. It is this cleared buffer that presents the key for urban agriculture as traffic, pollution, physical danger and land cover directly on the corridor make it highly unsuitable.

The flows of information, people, goods, waste and activity that tie the conurbation of Montreal together are made possible by multiple forms of infrastructure. Streets, back lanes, highways, railways, waste management services and facilities, metros, hydroelectricity lines, telephone cables, signal towers, sewers, water lines and natural gas lines are the unglamourous means by which the city is able to function. Among the activities that many of these infrastructures support is urban agriculture.

A stunning example of the influence of infrastructure on urban agriculture sits along the railroad where Montreal West meets Notre-Dame-de-Grace. The land on which the town sits was originally the site of family farms and the original Montreal Blue Bonnets Race Track. In 1886, the Canadian Pacific Railway laid its first set of tracks that would cut through the landscape

to carry commuters between the old centre of Montreal and outlying communities to the north, west, and south of the city. Incorporated in 1897, Montreal West went through a number of successive growth spurts with the first occurring around incorporation and lasting up until the First World War. Up until WWII, there remained lands within the town of Montreal West and along the western side of NDG that were not built up. This changed under heavy pressure from postwar immigration and economic growth in the Montreal region. Thus, from the 1950s to the 1960s split level houses, modest duplexes, quadruplexes and walk-up apartments were built on the more marginal lands adjacent to the noisy commuter train lines and hydroelectric corridor.

The corridor is host to highly productive domestic vegetable gardens, fruit trees and of course some lawn along nearly 0.9 km of its length. With the largest gardens located under and around the hydrocorridor to the west of the rail line. Along that same section, lot depth ranges from 20 to 50 feet thanks to an arrangement between land owners and Hydro Quebec by which the company leases its hydro right of way for an annual fee of $50. On the east side of the railroad tracks conditions are less favourable, however UA is still conducted to a smaller extent. The urban farmers there are able to overcome issues of shade from overgrowth bordering the CPR property and limited space by extending their production onto CPR land and elsewhere by managing the wild growth.



Conclusion

UA is a highly adaptable activity and though it is largely constrained by the harsh Montreal climate with its large seasonal variation, it is able to flourish throughout the city when weather permits. Though information on the contribution of informal, private gardens to urban food security is still unknown, it is safe to say that the potential to expand urban food production is great. Nonetheless, there are some serious obstacles imposed by the built form laid out in previous development eras in the city's history. The industrial housing common in the Sud Ouest boroughs with their dense two to three storey construction and concentration of open space in interior courtyards are not amenable to UA. Likewise, the three storey walk-ups backing onto Mile-End alleys create open space that is too shady to support plant growth.

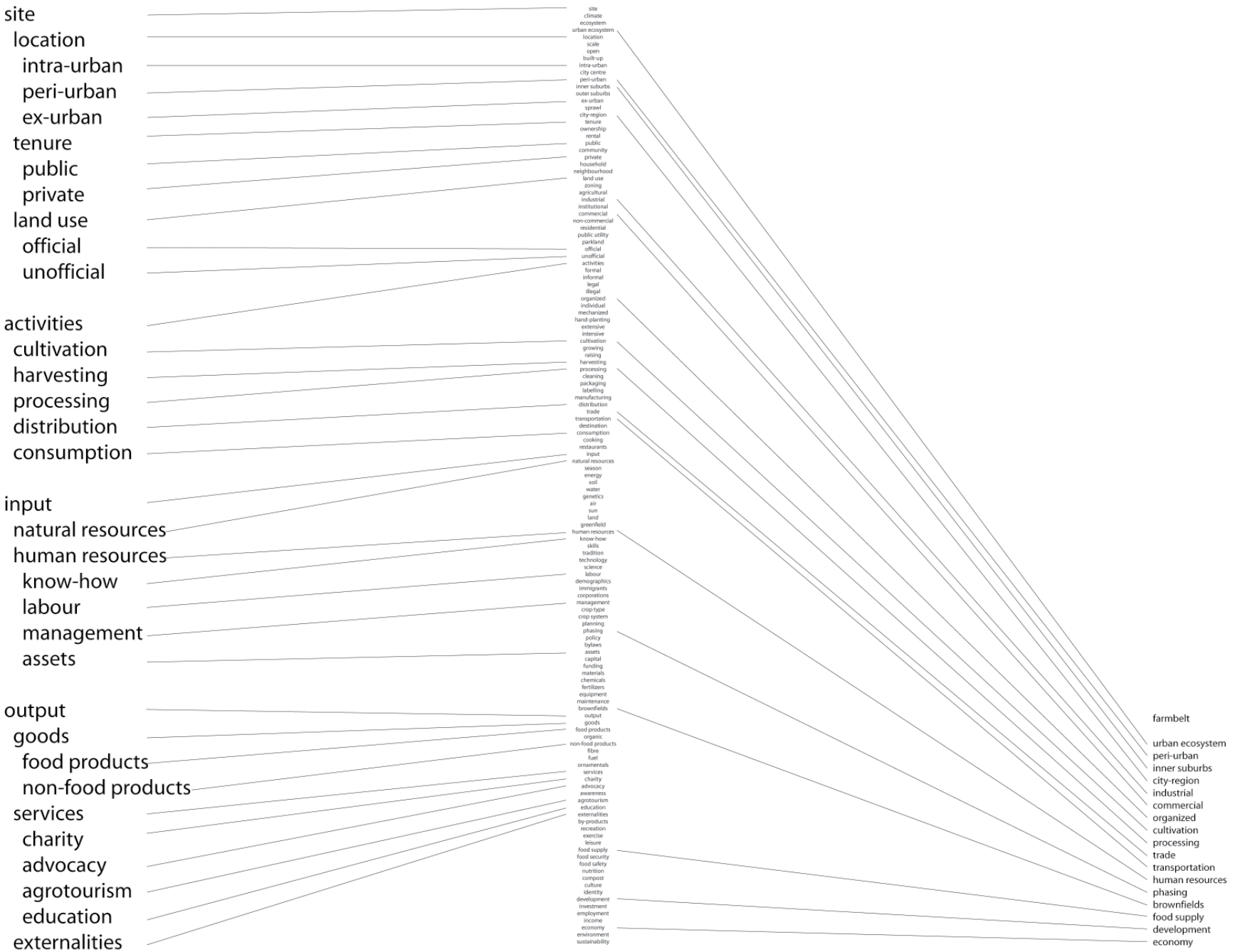
By highlighting this relationship, the project contributes to the growing body of work surrounding practical, responsive and preemptive policy for urban agriculture activities. Urban agriculture is valuable partly because it attempts to make efficient use of resources. Ideally, urban agriculture is inserted into the city structures without causing disruptions to pre-existing systems, communities and places. This research may help point municipalities toward underused spaces that would be suitable to UA. This research is also of use with regard to new development. Through the formulation of responsible community planning policy and guidelines, new development can be designed to avoid certain constraints to incorporating UA into communities as they mature and as the need and desire to carry out this activity present themselves.

Farmbelt

Urban Agriculture for Inner Suburbs

Kate Patterson

Power Corporation of Canada Award at the CCA: Summer 2007 Research Residencies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economy

Urban Agriculture is the occupation, business, or science of cultivating, processing, and distributing food and non-food products via an organized industry that, by mechanised or non-mechanised means, makes use of natural and human resources* found in the urban ecosystem of a city's inner suburbs to in turn furnish fresh produce, jobs, and economic development primarily to those inner suburbs, and consequently to the city centre and outer suburbs of the city-region.

*human resources refer to underused or wasted energy, materials, equipment, land and surface area, skills and labour.

Manifesto for agriculture in Canadian cities

I. Canadian city-regions

Canadian cities no longer operate as the referent opposite to surrounding towns; urban growth in formerly rural towns has migrated across the historically explicit urban-rural boundary, replacing the tracts of farmland that previously separated towns and suburbs from each other with a continuous urban fabric. The result is the city-region, a largely agriculture-free agglomeration made up of the traditional city centre, the older inner suburbs, and the new outer suburbs.

II. Urban + Agriculture

The removal of agriculture from the city leaves us estranged from the productive potential of the land. In the modern city-region, any public green space is automatically park space, defined by an absence of the production that fuels a working city. Hence the seeming incongruity of urban agriculture beyond the scale of the backyard or community garden.

III. Periphery as site

Currently suspended between centre and sprawl, the inner suburbs seem to occupy a forgotten territory. It is this quality, however, that makes them ripe for urban agriculture. Large tracts of under-used land found in inner suburbs have accumulated over the course of de-industrialization and outer suburban sprawl, potential sites for extensive industrial farming.

IV. By-products of the city: waste-fallow-productive

The underused spaces of inner suburbs in Canadian cities demand a second look. Currently resigned to classification as negative by-products of urban growth, these spatial leftovers are in fact indications of a healthy growing city and have developable potential as positive and productive landscapes. Shifting our assessment of these underused spaces from negative to positive rescues them from the fate of undervalued waste landscapes and reimagines them as fallow fields with potential market value. They appear to us anew as the raw materials and natural resources of the urban ecosystem, positive and usable by-products of urban growth.

V. The economy of food

After appraising the value of this previously ignored urban resource, urban agriculture on an industrial scale becomes economically feasible by virtue of the size of these inner suburban sites, which are large enough to ensure an efficient economy of scale. The viability of implementing agriculture on these inner suburban sites is rooted in the productive nature of the act of farming, the operative nature of the cultivated landscape. Further, the inner suburbs have the demographics to supply a labour force and a consumer market for the agriculture, and are ideally situated so as to be accessible by potential consumers from the city centre and outer suburbs as well.

VI. Flexible production

Just as these spaces were created by Canadian cities' urban growth, so too should they continue to be subject to these forces of change. The flexibility of urban agriculture would allow for development tailored to each site, from phased implementation of a permanent organic food farm to foster food safety and security for the city region, to short term cultivation of cash crops to prepare site and supplement funding for a low-cost housing project.

VII. From greenbelt to farmbelt: an agricultural archipelago

In contrast to the Greenbelt concept of a thick and continuous ring of empty, unproductive green space that would contain and define the urban frontier, the farmbelt concept seeks to create a porous and flexible archipelago of inhabited, productive farmland strung through the inner suburbs that will invigorate the inner suburbs' community and economy.

VIII. Reinvesting in the periphery

Reactivating the inner suburbs using urban agriculture reinvests in this overlooked area and recognizes its potential for production. Injecting the local economy with agricultural activity contributes new jobs and fresh produce that improve the quality of life for residents. This economic and community growth reintroduces the inner suburbs as a desirable place to live, work, and visit, thereby refocusing the forces of growth inwards. Effectively intensifying and densifying the inner suburbs, urban agriculture combats further sprawl of outer suburbs by infusing the inner suburbs with magnetism for new growth.

Suburban communities located on the fringes of Canadian cities can no longer be defined by their opposition to the city centres they surround: urban growth in formerly rural towns has migrated across the historically explicit urban-rural boundary, replacing tracts of farmland that previously separated towns and suburbs from each other with a continuous urban fabric. The result is the metropolitan city-region, a largely agriculture-free agglomeration containing the traditional city centre, the older inner suburbs, and the new outer suburbs. The traditional distinction between rural and urban is no longer visible or relevant; census data is collected as either metropolitan or non-metropolitan.[1]

The removal of agriculture from the city and its formerly rural suburbs leaves us estranged from the productive potential of the land. In North American cities historically, any public green space has been automatically deemed park space, defined by an absence of the production that fuels a working city. This concept was most powerfully embodied by Olmsted, whose idea of parks as refuges from the city was propagated across the continent over the course of the 19th century.

Greenbelts

If Olmsted's urban parks can be said to represent the urban-rural distinction within city planning, then the greenbelt, a strip of undeveloped land surrounding a city, can perhaps be said to represent this distinction within regional planning. First outlined in London, UK, as the Greenbelt Act of 1938, the policy aimed to fix and officially demarcate the boundary of the city proper; in other words, to preserve the separation of rural and urban by containing the city's growth and preventing rural towns from merging into it or into each other. London's greenbelt, based on this 1938 act, came into being in 1959 as a 10-16km-thick ring containing more than 2,000 km2 of continuous protected land.[Fig.1] To achieve their desired effect, planners essentially froze this land in its rural state.

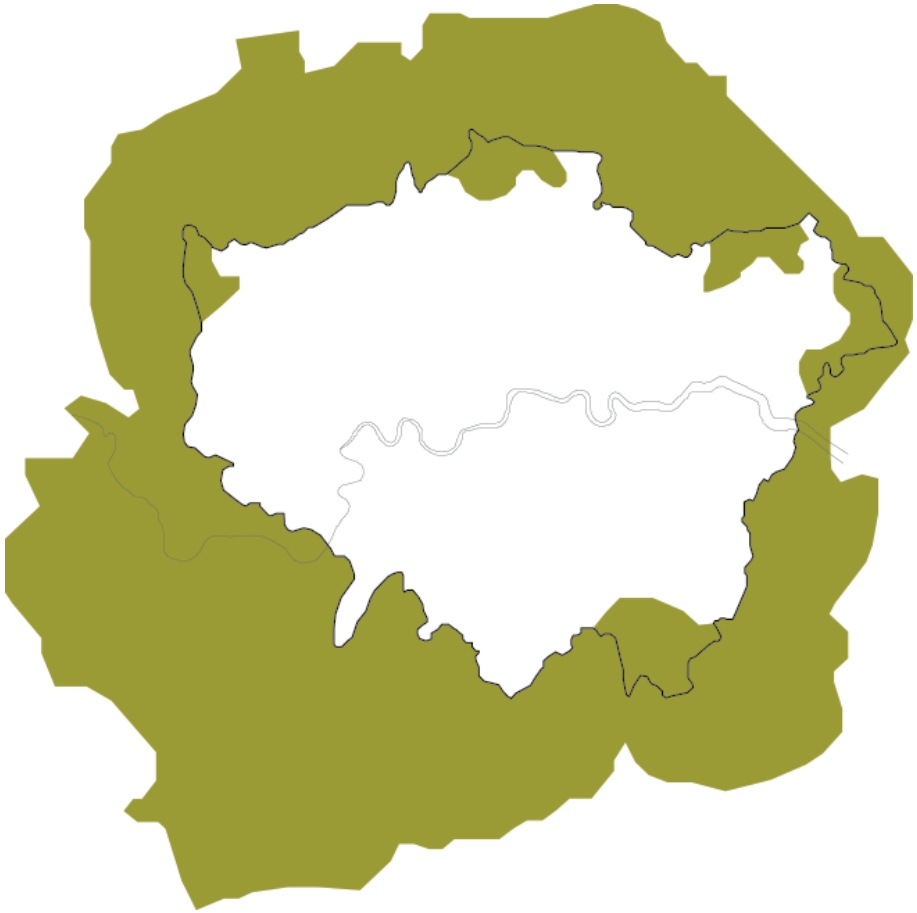


Fig.1: The London Greenbelt, as proposed in 1944 by Patrick Abercrombie, and as established by 1959 approximately to this design.

[1] Statistics Canada uses the distinction between urban and rural areas only "for the purpose of describing historical trends." Current data comparisons are made between metropolitan and non-metropolitan areas.

London's greenbelt was no match for the forces of urban growth, which exerted immense pressure to develop within the protected land, and even leap-frogged over it as necessary. As London inevitably grew, the belted land appeared more and more glaringly as perfectly situated for the kind of suburban development that could have accommodated this growth; in addition, the decision to freeze the land in the face of development stood in for any real consideration for Londoners' use of the space. The greenbelt stood empty and unproductive, and became a negative rather than positive impediment to the city's healthy growth.

Interestingly, when the study that led to the Greenbelt Act was first requested in the late 1920s, it was for a potential 'agricultural belt' around the city of London. While the containment of the city and its distinction from the countryside was a prominent goal, equally important was the establishment of greenspace on the urban fringe for the recreation and amenity of Londoners. Raymond Unwin, commissioned for the study, dismissed the purpose of urban containment in favour of the second goal, the possibility of a 'city dweller's countryside'[2]. Unwin's proposal privileged public use, taking the form of a ring-shaped network of greenspaces located according to topography and accessibility, and including both rural and peri-urban, open and built-up sites.[Fig.2] The porosity of the scheme would have allowed for future development, while the accessibility of the sites held potential for flexible and active use by city, suburban and rural residents alike.

Shocked by rapid post-war growth, planners panicked and discarded Unwin's proposal in favour of one designed to maximize containment [Fig.1], a choice that entrenched them in a losing battle against the city's inevitable expansion. Growth is an indicator of an active city, comparable to a force of nature and unyielding as such.[3]

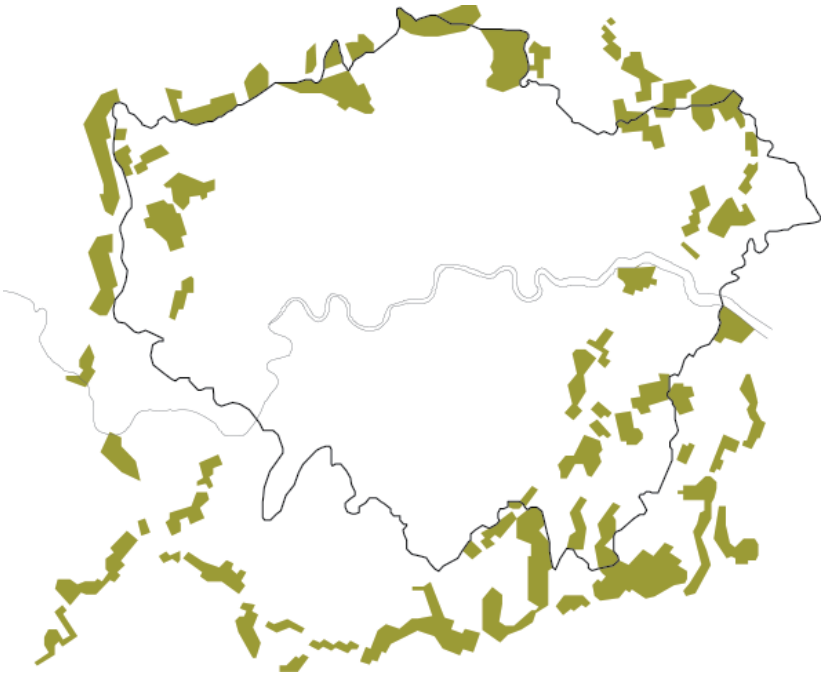


Fig.2: Proposal for London's Greenbelt, Raymond Unwin, 1932.

[2] William H Whyte. The Last Landscape. Garden City, NY: Doubleday, 1968.

[3] Countless other greenbelts have been implemented around the world to varying degrees of success or failure as containers of urban growth: Melbourne, Ottawa, Toronto, Vancouver, Dunedin, Stockholm, Oregon, Minnesota, San Francisco, Staten Island, Anchorage.

Greenbelt or equivalent land-use policies are in place in each of Canada's three largest city-regions, Toronto, Montreal, and Vancouver, indicating that the impulse to contain urban growth is still strong. As well, however, requests for rezoning to develop within this protected land are constantly being processed as Canadian cities continue to expand.[4]

Rights to this land demanded by both urban and agricultural interests is at the heart of the problems facing these policies today. Called "conflicting land uses" by policy-makers, this tension is an indication of two basic facts:

I- land presently occupied by cities is ideal for both urban and agricultural practice: its location on waterways means it is perfectly situated for the high trade and culture of a city, and it is also the site of the most fertile land in the geographical area.[5]

II- this condition requires re-evaluation: cast as a conflict of land uses, an arrangement of cohabitation of cities and agriculture could instead bring these two processes of production, hitherto thought of as incongruent or conflicting, into cooperation within the urban ecosystem.[6]

Ontario Greenbelt

The Ontario Greenbelt stretches across much of the Greater Golden Horseshoe, the most populous and fastest-growing area in Canada, and protects environmentally sensitive land from real estate developers and urban sprawl. Proponents of the policy tout its bounty of sights and activities, its support of the regional economy, and its contribution to preserving quality of life in the area. Opponents criticize it as a limitation to growth: farmers lament their rights to sell their land to whomever they please, while developers face inflated costs due to the limited amount of land available as restricted by the Greenbelt.

website www.ourgreenbelt.ca **established** 2005 **mission** "To promote and sustain our Greenbelt as a beneficial, valuable, and permanent feature, enhancing the quality of life for all residents of Ontario" **contains** greenspace, farmland, forests, wetlands, watersheds, and unique land formations like the Niagara escarpment, Rouge Park, Oak Ridges Moraine **size** 7,300 km2 **protected b**y Friends of the Greenbelt Foundation **of note** farmers staged protests against the Greenbelt in March 2005 by driving convoys of tractors through downtown Toronto; the Greenbelt's logo was designed by Bruce Mau [Fig.4]

[4] Statistics Canada uses the distinction between urban and rural areas only "for the purpose of describing historical trends." Current data comparisons are made between metropolitan and non-metropolitan areas.

[5] For example, the rich soil of the Fraser River delta is the best farmland in BC, and the lowlands surrounding the St. Lawrence River are the most fertile in Québec.

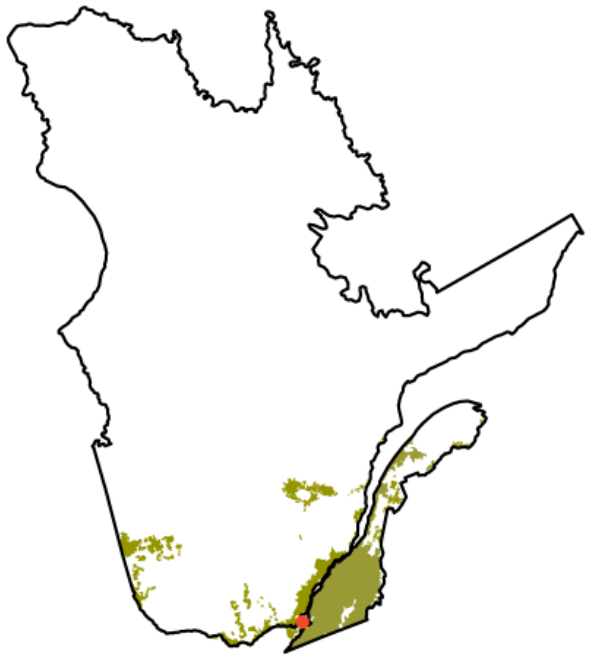
[6] The strongest argument city dwellers take up against cohabitation with agriculture has to do with hog industry and the smells related to it. This perhaps means that the farmbelt of urban agriculture I am proposing here would have to exclude animals to be feasible.

Fig.4: Greenbelt logo designed by Bruce Mau

Zone Agricole du Québec

Québec's Zone Agricole was established through the Protection of Agricultural Land Act, a response to the effects of unregulated suburban sprawl witnessed throughout the 1970s. The protected zone was created to protect the agricultural land base of the province, as Québec's most fertile land was being eaten up by new development and agricultural production was in decline. The act was also one of two measures designed to curb urban sprawl (the other was a moratorium on new transportation infrastructure between the suburbs and Montréal). The policy has not always been top priority: it came under threat in the mid-1980s when new policies weakened the Act. Revisions in 1997 increased the responsibilities of municipalities and strengthened the means of implementation.

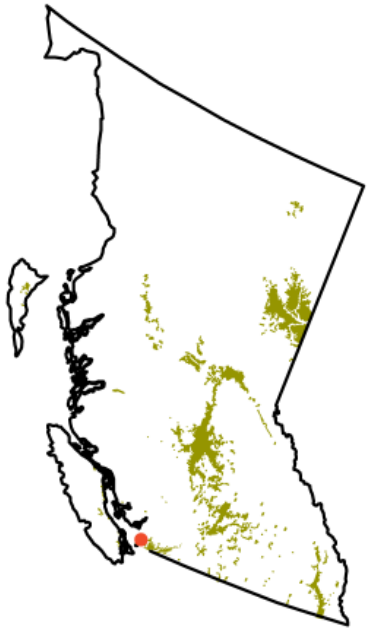
website www.cptaq.gouv.qc.ca **established** 1978 **mission** "To guarantee for future generations an area that facilitates the practice and development of agricultural activity" **contains** forest, farmland, limited non-agricultural development **size** 63,500 km2 **protected by** Commission de Protection du Territoire Agricole Québec **of note** the area protected has remained almost unchanged since its creation



British Columbia's Agricultural Land Reserve

The Agricultural Land Reserve established by the Greater Vancouver Regional District (GVRD) in 1973 was one component within a larger greenbelt-style initiative: the Green Zone. In addition to agricultural land, the reserve protects other areas of social and ecological value (parkland, open space, environmentally sensitive terrain). The Green Zone was part of the GVRD's Liveable Region Plan conceived in the 1970s for environmental protection, land and resource conservation, and economic development. To ensure the protection of agricultural land, the Plan encouraged urban densification rather than new development; however, the GVRD lost the power to govern municipal land use in 1983, leaving cities free to expand.

website www.alc.gov.bc.ca/alr **established** 1973 **mission** "to preserve agricultural land and encourage and enable farm businesses throughout British Columbia" **contains** agriculture **size** 47,000 km2 **protected by** Agricultural Land Commission **of note** like Quebec, little of the reserved land has been rezoned for development

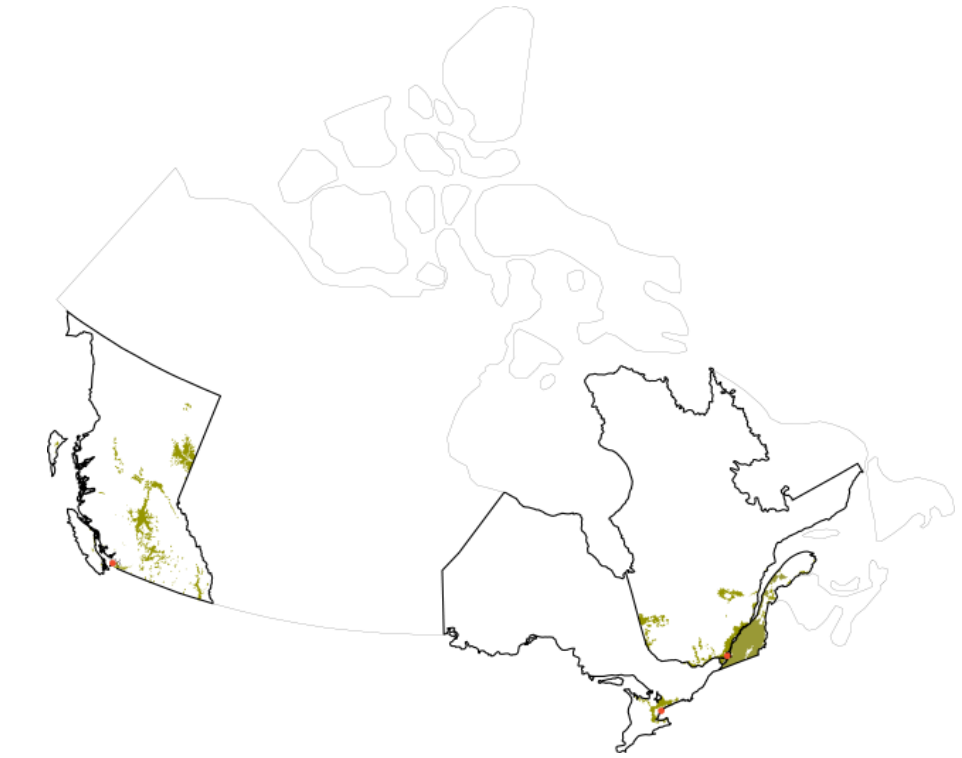


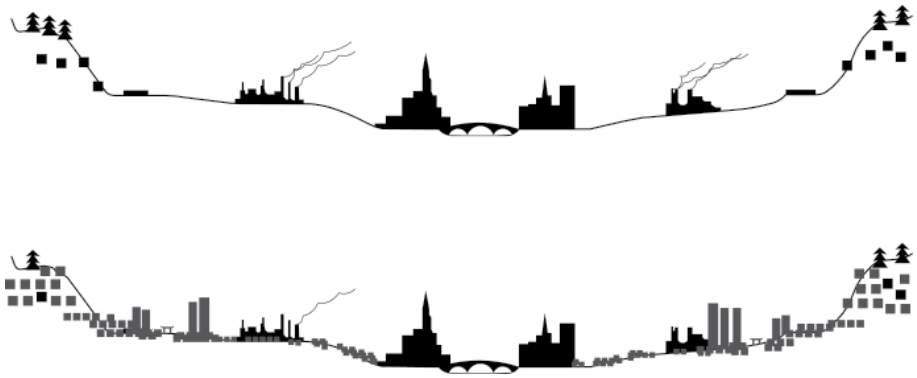
Until recently, urban growth in North America followed a radial or centrifugal pattern, based on the assumption that those who either couldn't stomach or couldn't afford city life could access it by living close by; hence the birth of inner suburbs and the periphery of the city, from which residents could travel to the city for work and play. Today, however, the supremacy of the city centre as the singular gravitational force dictating this pattern of growth is being challenged: rapid urbanization of land outside city limits has reduced the traditional city centre to just one among many urban centres, collectively known as the city-region and amalgamated into large census areas.

Thus, the city centre is no longer the automatic preference when choosing the site of one's home, work and leisure, neither is it the uncontested frontier of modern innovation. Urban centres in Canadian suburbs have become the destinations of choice for new families, young professionals, and economic investment in business, industry, and retail, traditionally all the domain of the city centre. Further, the waterways and railways that intersect at the city centre are no longer the major modes of transportation within the city-region; transportation by road and air now predominate and have stimulated the growth of satellite cities along their corridors.

The inner suburbs are named in reference to the massive ring of outer suburbs that now surround them, leaving them caught between and overshadowed by a vibrant downtown and booming sprawl. Inner suburbs are located on the fringe of the original city, and are therefore often classified as peri-urban. As the first areas to be expanded into as locations for industry and suburban housing outside the city proper, they typically grew along the traditional transportation routes: water and rail, as industry depended on ships and commuters depended on trains.

The cost of living is still relatively low in the inner suburbs, but this is accompanied by less government funding, especially for public transportation, roadwork, education,





This history of greenbelts and urban parks, considered in combination with the absence of agriculture from the modern city-region, explains the seeming incongruity of farming in the city, or urban agriculture. Productive landscapes within the city generally do not extend beyond the scale of the backyard or community garden. However, current concerns touching energy consumption and sustainable food supply have prompted cities to ask themselves why such an overwhelming percentage of the produce they consume has to be imported. The productive capacity of a city is what defines it; why, then, can cities not produce their own food? The assumption that urban open space has to be safeguarded from the functionality and productivity of the city by designating it as parkland therefore stands to be re-evaluated.[7]

This proposal aims to go one step further by adding the qualification that productivity could be more literally translated as agriculture rather than just programmed use. The work presented here attempts to move beyond the scale of the allotment plot, beyond the limits of the city centre, and beyond the condition of the present to explore future possibilities for urban agriculture in Canadian cities, namely the possibility of large scale industrial farming in our country's inner suburbs.[8]

Having introduced the inner suburbs of Canadian cities as an undervalued terrain suspended between city centre and surrounding sprawl, they can now be reimagined as viable sites for urban agriculture based on the useable human resources they contain. In the spirit of Unwin's proposal for the London greenbelt as an attempt to work with, rather than against, the forces and the resources of the city, the assets that can be extracted from the inner suburbs could become the basis for a new agricultural industry in Canadian cities. The ecosystem of the inner suburbs contains human resources presently wasted or underused, which form the foundation for the conditions I have identified as conducive to urban agriculture.[Fig.1]

[7] The idea that urban green space could potentially accommodate both leisure and functionality is not new: an early example of these two opposites coexisting is the Bos Park in Amsterdam, designed by Cornelis Van Eesteren and Jacopa Mulder in 1930 as a programmatically functional and productive landscape (see Anita Berrizbeita "The Amsterdam Bos: The Modern Public Park and the Construction of Collective Experience", in Revovering Landscape). Similarly, industrial parks in Germany's Ruhr Valley have combined the industrial functionality of the past with recreational use in the present (see www.landschaftspark.de)

[8] Although it is true that present suburban lands were once agricultural, the following proposal should not be mistaken as a call for return to a pastoral way of life. Rather, by introducing the highly productive practice of agriculture into the city-region, this proposal seeks to present the productive nature of agriculture as a decidedly modern industry befitting growing Canadian cities.

Many scholars have noted the untapped potential of these left-over spaces on the fringes of modern cities...

Lars Lerup's dross: "The ignored, undervalued, unfortunate economic residues of the metropolitan machine." [Lars Lerup. After the City. Cambridge: MIT Press, 2000]

Ignasi de Solfl-Morales' Terrains Vagues: "…spaces internal to the city yet external to its everyday use…These strange places exist outside the city's effective circuits and productive structures." [Ignasi de Solfl-Morales Rubiff. "Terrain Vague" in Anyplace. Cynthia C. Davidson, ed. New York: Anyone Corporation, 1995]

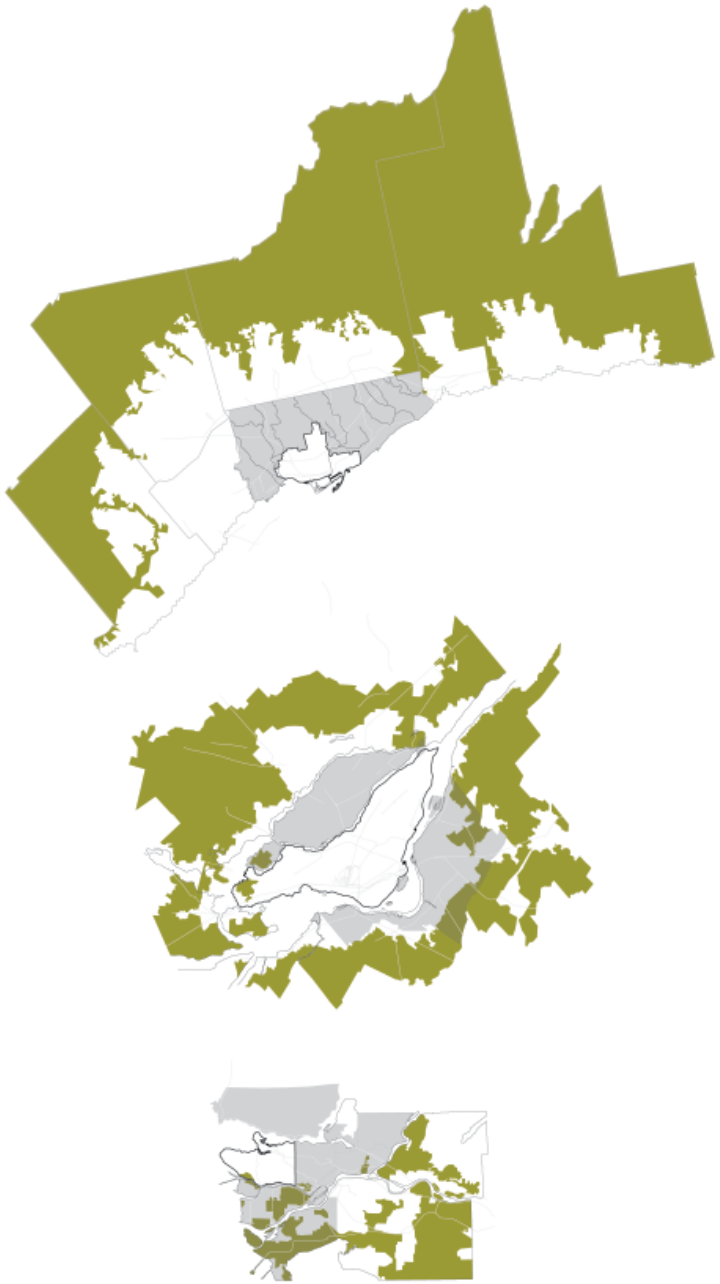
Mohsen Mostafavi's ecological urbanism: unknown possibilities and potentials exist at the edges of the city where sites are encountered for what they are, "as is", and the landscape becomes one of raw materials to be employed. [mohsen mostafavi [Mohsen Mostafavi. "Ecological Urbanism."lecture delivered at symposium titled Sustainable? CCA, Montr□al, June 16 2007]

Gilles Cl□ment's d□laiss□s spaces: "Every rural or urban development, however technically accomplished and in whatever spirit of land use, generates some wasted space that awaits a future use… d□laiss□ or abandoned place, formerly exploited as agricultural, industrial, urban or touristic space – d□laiss□ being synonymous with the notion of friche, untended or fallow." mohsen mostafavi [Gilles Cl□ment, Philippe Rahm. Environ(ne)ment- Approaches for Tomorrow. Giovanna Borasi, ed. Catalogue of an exhibition held at the Canadian Centre for Architecture, Montr□al, QC, Oct.17, 2006- April 23, 2007]

Alan Berger's Drosscapes: "Drosscaping, as a verb, is the placement upon the landscape of new social programs that transform waste (real or perceived) into more productive urbanized landscapes." [Alan Berger. Drosscape. New York: Princeton Architectural Press, 2006.

and other public services. New expressways and interchanges connect the outer suburbs to the city centre, privileging these populations and bypassing the inner suburbs. Modest post-war homes on small lots, row housing, and low-rise apartment blocks make up the bulk of inner suburban housing stock, resulting in a high population density compared to outer suburbs.[4] Inner suburbs suffer from the same problems that affect cities of similar population densities, such as crime and homelessness. As the oldest communities outside the traditional city, most inner suburbs are well-established neighbourhoods with long time residents, and are also home to a large proportion of racial and ethnic minorities, whose immigration into those neighbourhoods accounted for much of their growth in the past.

From here, my study will focus on the case of Toronto's inner suburbs within the GTA, pictured on the following pages. These include Etobicoke, North York, York, East York, and Scarborough.



The inner suburbs of three Canadian city-regions, in grey. From the top:
Toronto: Etobicoke, North York, York, East York, Scarborough
Montreal: Laval, Longueuil, North Shore, South Shore
Vancouver: Burnaby, New Westminster, North Vancouver, West Vancouver, Richmond, Coquitlam, Port Coquitlam, North Surrey, Pitt Meadows

Table 1- Human resources found in inner suburbs available to urban agriculture

Type	Description	Examples
Space	Spaces available or convertible to urban agriculture are present in these areas in the form of both functioning and decommissioned sites.	energy: recaptured heat and electricity water for irrigation: grey water, storm run-off land and surface area: underused, abandoned or vacant space, functioning space that could also support agriculture, roof tops
Demographics	available sites could be cultivated and managed by employees hired largely from the inner suburbs. As well, local residents are most in need of available and affordable fresh produce, thus constituting the main market for goods produced.	skills: local residents with special knowledge, e.g. immigrants to Canada with farming backgrounds, recreational gardeners, etc. labour: local residents in need of employment: retirees, unemployed, students, immigrants
Location	located between the city centre and the outer suburbs, produce is available to consumers from all areas. Large rail yards located in the inner suburbs could form the backbone of a transportation system to move goods from their place of production to other locations throughout the city-region.	equipment: rail cars, railway networks

GTA = 5,903 km2

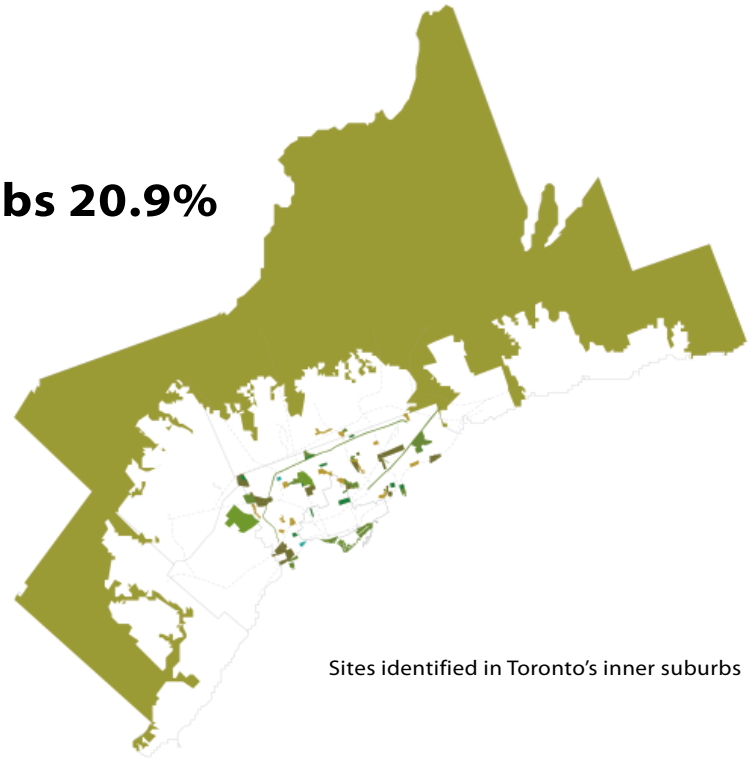
Inner suburbs = 527 km2 **Additive area of sites identified = 110 km2**

Sites identified as percentage of inner suburbs 20.9%

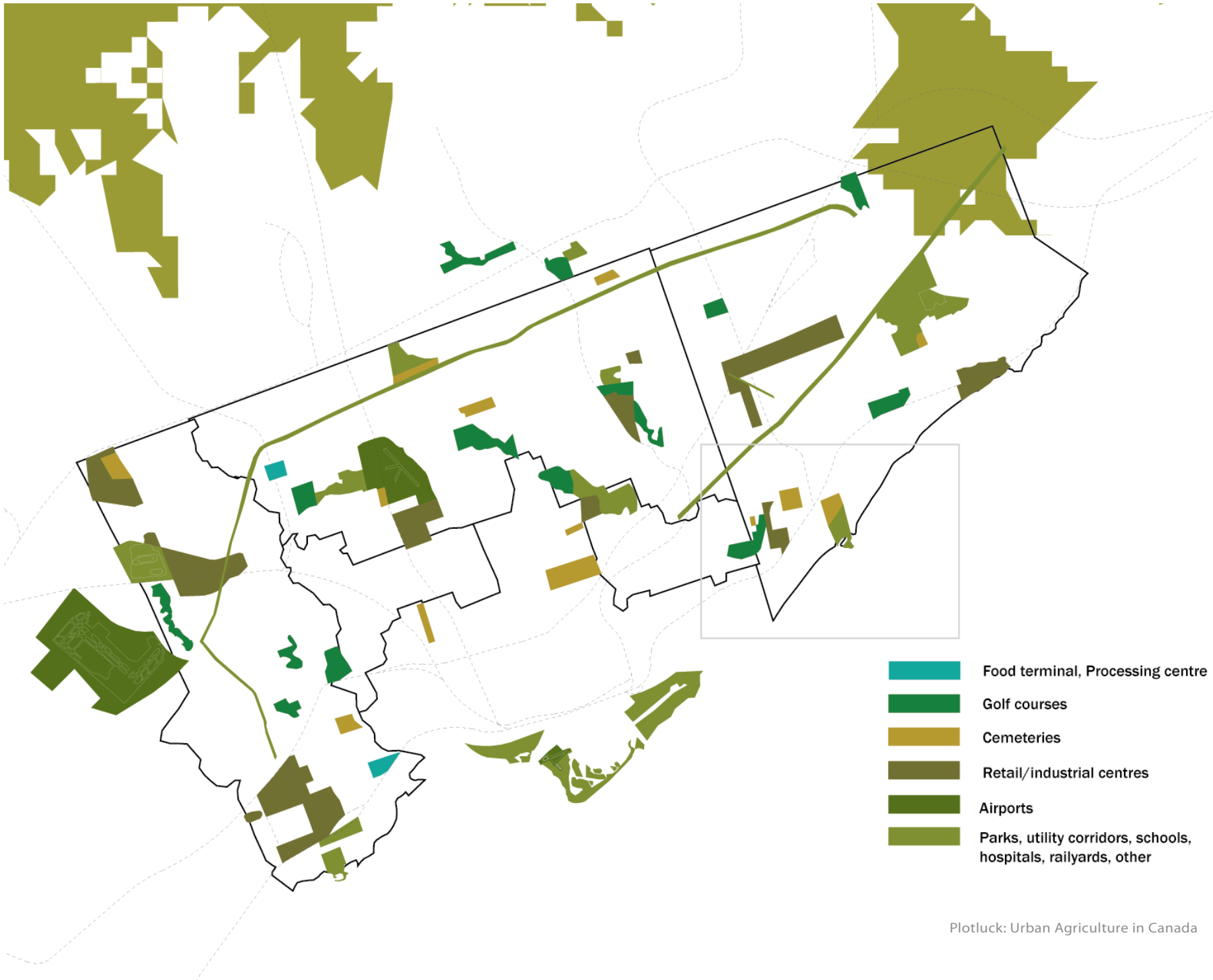
Table 2- Sites identified in Toronto's Inner Suburbs

Type	Total Area km2	Potential Crop
Industrial sites	17.7	non-food crops (sunflowers, corn)
Retail Centres	12.3	rooftop berry crops
Golf courses	13.9	cash crops (wheat, barley, oats, corn, canola)
Cemeteries	7.5	apple orchards; cut flowers
Airports	23	greenhouse crops
Parks	8.2	flowers, cut and potted
Utility corridors	6.6	granzing lands, apiaries
Schools, school grounds	2.6	market garden produce, organic
Hospitals, hospital grounds	2.4	market garden produce, organic
Railyards	6.4	non-food crops, flowers
Other*	10	various

*Biotech centres, Woodbine racetrack, the Ex fairgrounds, treatment facilities



Sites identified in Toronto's inner suburbs

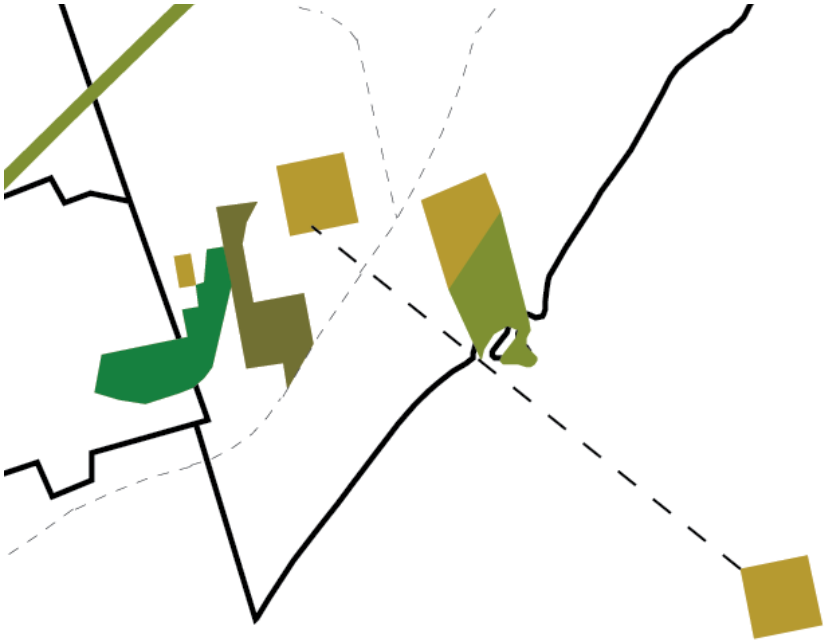

Food terminal, Processing centre
Golf courses
Cemeteries
Retail/industrial centres
Airports
Parks, utility corridors, schools, hospitals, railyards, other

Potential impact: social, economic, environmental

The process of transforming areas perceived as wasted into productive landscapes would effect a fundamental change in the way residents see their community. A sense of pride in the products of their community would foster increased action in civil society and local government. Education would take place directly (school programs, demonstration gardens, employee training) and indirectly (visibility of agriculture, consumption of locally grown produce). A connection of residents to their local food would promote awareness of issues of food supply, nutrition, and ecology.

This strength would also be complimented by new economic activity, stimulated by the new agricultural industry. Produce from these areas would have high market value as local and/or organic, and new salaries and money earned from the sale of produce would also contribute. Other related industries (seasonal local cuisine in restaurants, agrotourism, local bakeries) would spring up. The skills of certain residents (students, immigrants with farming backgrounds, retirees) could be put to use, and local residents would also be the main consumers of the community's yield. As well, customers from the city centre and outer suburbs would come to buy the products. Strengthened economies in these inner suburban areas could reintroduce them as desirable places to live and work, potentially inspiring a densification of housing and reducing the pressure that the outer suburbs are exerting on the farmland that remains on the frontiers of the city-region.

Environmentally, agriculture would begin to remediate contaminated sites that were once industrial. This land is prime for development, and, as such, could be cleaned and prepared by agriculture for future housing projects that would aid in the densification of the inner suburbs. This could help reduce the forces of urban sprawl and save remaining agricultural land from development. Residents of the inner suburbs who become employees of the new industry would not have to commute to work, reducing emissions due to heavy commuting. And finally, the presence of plants and green space in the inner suburbs would promote clean air and biodiversity in the area.



Each case study site would be analysed and evaluated for the following variables to determine the most appropriate application of agriculture:
-location + relevant topographical information
-status (toxic/safe, decommissioned/functioning)
-crop type(s) and system(s)
-funding source, actors, work force
-materials/equipment/buildings needed
-destination market for product
-transportation of goods and people
-potential yield and monetary value
-phasing of future development: duration of agriculture on the site will vary. For example, some sites will be permaculture (like an organic market garden farm); others will go through several phases (like a contaminated site planted with non-food crops to remediate the soil, after which the site would be safe for food crops or even development like low-cost housing)

potential additional programs:
-farmers markets
-agro tourism
-restaurants/bakeries/cafes
-buildings converted into use for agriculture
-renovation of buildings to affordable workers' housing
-new irrigation canal systems
-new transportation routes and systems

Case study

Pine Hills Cemetery

Location: Scarborough

Area: 70 hectares

Status: functioning cemetery

Potential crop: apple orchard

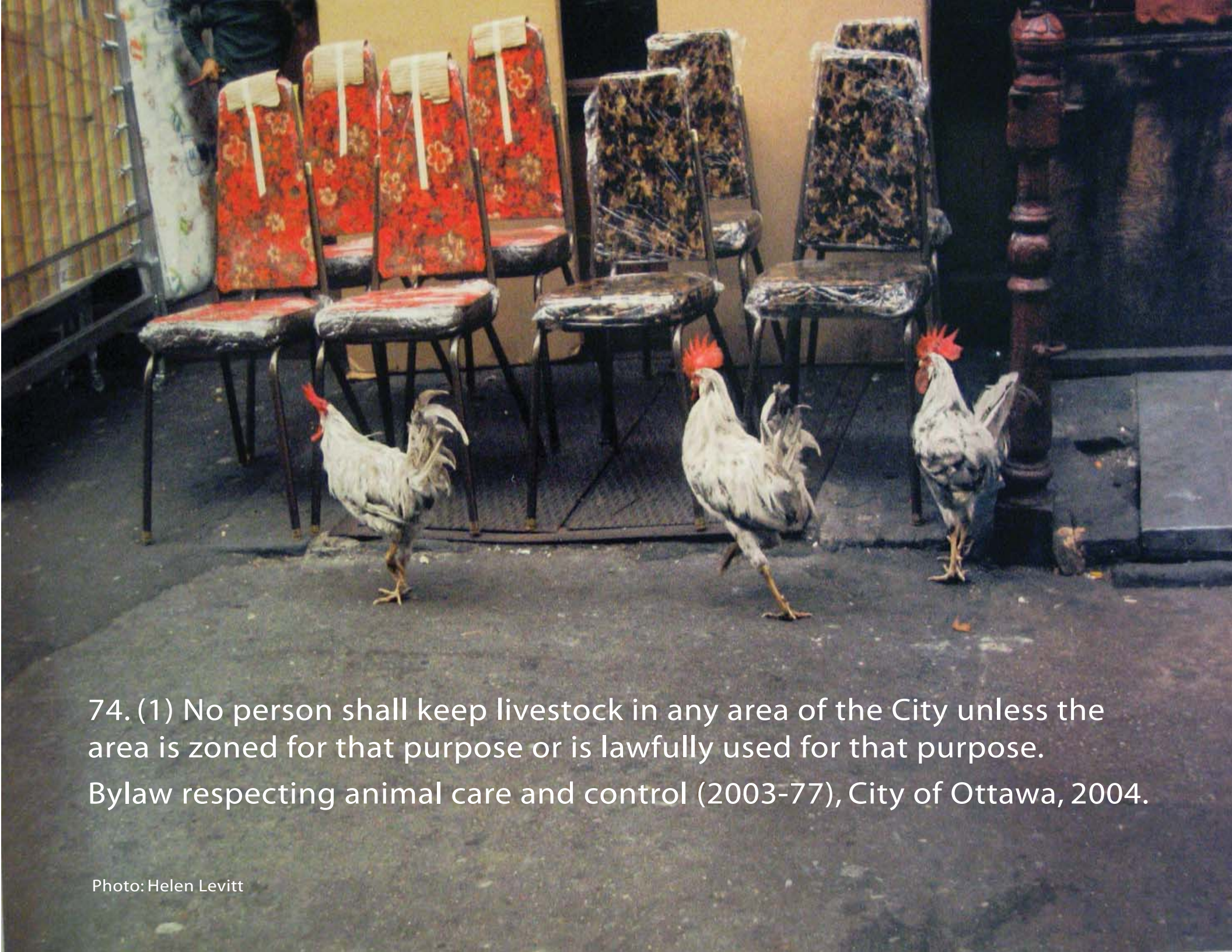
Annual yield:

~1,000 trees/hectare, ~100 tons/hectare = ~7,000 tons of apples

annual value:

~$2,254,000 value (at $322/ton for Golden Delicious apples)

Additional programs: Agrotourism



74. (1) No person shall keep livestock in any area of the City unless the area is zoned for that purpose or is lawfully used for that purpose.

Bylaw respecting animal care and control (2003-77), City of Ottawa, 2004.

Photo: Helen Levitt