The Marriage of Form and Function in Contemporary Kitchen Gardens

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We accept this thesis as conforming to the required standard

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Abstract

Food production and the betterment of the urban landscape find a common form within the contemporary kitchen garden. This project focuses on integrating kitchen gardens into the East Fraserlands residential development in southeast Vancouver. A range of intentions drive the design. These include: enhancing the overall health of the community, demonstrating the aesthetic qualities of vegetables, herbs, fruits and the maintenance facilities that are necessary for these gardens; bringing the process of eating and cooking closer to the productive garden; and, increasing the sense of civic spirit through community involvement in the processes of growing and harvesting food in the city.

East Fraserlands is located on the northern shoreline of the Fraser River in southern Vancouver. Historically, the site was an agricultural area until the early 1900s when it was converted into a logging operation. While currently zoned industrial, the City of Vancouver plans to redevelop the site to house 10,000 people in a range of housing types. This design implementation focuses on reorganizing the open space configuration of East Fraserlands for improved agricultural, as well as community use. For simple classification, a range of kitchen garden typologies or "types" were defined in various locations throughout the community. These garden typologies were grouped into several categories: interstitial/adjacencies, public open spaces, semi public spaces and private spaces.

For the purposes of this project, three typologies were designed in detail: The café garden, street and community allotment garden. Design interventions focus on the individual functions and location of these spaces and the interaction between them.
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1 Introduction

Sustainability involves ecological, social and economic aspects. One element that spans the breadth of these issues is food. It is not only a staple of life, but also a foundation of cultural tradition and diversity. In the past, communities relied more on local produce and goods, and had knowledge of when and where the food was grown. Communities also had many celebrations and feasts based on the planting and harvesting of crops. People were not only eating the products of their own labor, they were connecting to their community through feasts and harvest celebrations. Communities and cities must rely more on locally produced food for several reasons. These include:

1. To reduce fossil fuel consumption and effects of large scale agriculture
2. To increase the overall health and taste of foods
3. To bring revenue to local businesses
4. To initiate civic spirit through the celebration of planting and harvesting
5. To bring back a spiritual meaning in the garden

This project will not only focus on the incorporation of urban agriculture, it will bring a coherent spatial form through the application of a historical type of garden; the Kitchen Garden. While there are many manifestations and forms of agriculture, the kitchen garden holds both a useful and divine place in the history of civilization. From the era of China's Ming Dynasty to the court of Louis XIV in France, these gardens have been part of many cultures. The age-old concept of growing food year round was not only a staple of life, but an art form as well. In the "King's Vegetable Garden" at Versailles, the formalistic aesthetic could also be applied to the potager du roi.¹ In the vegetable garden at Versailles, a terrace surrounded the entire site so onlookers

¹ Pennington, Susan J. (2002) Feast Your Eyes
could admire the ripening fruits and vegetables. Similar gardens have been in existence throughout the world. It was not, however, until the 18th century that the vegetable garden became solely a utilitarian place. This concept originated in Britain and rapidly spread to North America. There became a general tendency to overlook the vegetable garden as an art form; its interest lay only in the practical level.

The basis of this study is to rediscover the beauty and meaning of Kitchen Gardens, and to incorporate them into a contemporary urban residential community. The City of Vancouver has recently configured a master plan for the East Fraserlands, a Brownfield site located on the north shore of the Fraser River at Boundary Rd.

This site is an ideal location for a Kitchen Garden community due to its south facing shoreline. Additionally, the interest of local residents in a community-oriented garden has also been documented through City of Vancouver surveys and interviews\(^2\). The East Fraserlands Official Community plan calls for a mix of low, medium and high density residential, a main commercial street, and open space lands. The anticipated population is approximately 10,000 residents throughout the community.

Within the East Fraserlands development, the contemporary kitchen garden, like its earlier counterparts, can be a space that is functional, aesthetically pleasing, and spiritually rich. In order to define spaces that kitchen gardens could likely occupy within East Fraserlands, a typology study was developed. The typologies were categorized into four groups: private

\(^2\) The City of Vancouver (2002) Public Survey Data

2
space, public space, semi public space and interstitial/adjacencies.

- **Private Space**: residential yards, courtyards, and rooftops
- **Semi Public Space**: cafes and other commercial
- **Public Space**: Parks, greenways, streets, plazas, community/allotment gardens, school yards
- **Interstitial sites and Adjacencies**: vacant lots, railroad tracks, street shoulders, park edges, power line rights of way, parking lots

From the overall list, three typologies were selected and designed in detail: the restaurant garden, street and community garden. These Kitchen gardens were selected to represent a range of the typological groups to demonstrate the differences and similarities among the gardens. Each garden contains valuable design implications, speaking to the overall productivity and to the betterment of the visual and social landscape.
2 Kitchen Gardens Throughout History

Kitchen Gardens have been central to many civilizations. Their roots have been traced as far back as Early Mesopotamia (10,000 BC) where the beginnings of food cultivation emerged. These gardens were protected by walls and consisted of a cruciform arrangement of paths and watercourses. "The garden was a microcosm of the world, as the four squares represented the four continents known to man, and a central palm symbolized the bounty of life."1 While no physical or visual information remains of these gardens, the Romans made written accounts of them. Mesopotamians, as well as many past cultures, attributed a religious significance to the production of land and worshipped the deities that allowed them their bounty. The world of nature and religion were one.

During the Roman Empire (100 BC – 300 AD), there were gardens much like those of Mesopotamians (referred to as Roman peristyle gardens). The gardens were located within the walls of the home, as an interior courtyard garden. Here, food plants, medicinal herbs, fibers and dyes were cultivated. "From Pompeian wall paintings, it is evident that gardens in the horticultural sense were held in high regard, and it is known that the peristyles of houses were customarily planted."2

As Christianity gained momentum, many converts were encouraged to live a life of celibacy in secluded regions.3 Life was more difficult without the human networks and comforts of a village, and in order to survive, monks and believers began cultivating their own small plot of land for medicinal plants and food. Before Long, the truly "Christian" way involved living in small communal groups, wearing similar clothing, and being entirely self-sufficient.3 However, a great question loomed over these newly converted Christians. Could they be devoted to God and still

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1 Abbot, Marilyn. (2001) The Art of the Potager Garden
2 Newton, Norman T. (1971) Design on the Land
enjoy the pleasures of the earth? It seemed the garden was the only way in which this earthly connection could be fostered (as allowed by Christianity), and it began to take on religious

Figure 3
Roman House Plan with central garden

Figure 4
Medieval Garden
Inspirations. Soon walls went up to keep the pagan world at bay as well as the monks inside. It was behind these walls that the garden became a place of intensive study (and can be seen in Medieval man’s illuminated manuscripts, lines of poetry, and even legal disputes). Many monks used classical garden texts when laying out the garden, including Pliny the Elder’s “Natural History”, and the first century Herbal de Materia Medica, written by a Greek physician Dioscorides. Medieval monks also wrote many manuscripts regarding the design, properties, and growing of plants. “The cloister garden, with its four square reticulation and central fountain, hinted at a cosmic paradigm, and interpreters were often ready to read it as a diagram of the paradise to which the monks’ contemplation would admit them.”

Meanwhile, to the East, in the early years of the Ming dynasty (1368 – 1644 AD), vegetable gardens were a place of retreat and contemplation. “It was to vegetable gardens that the literati retreated from governmental affairs, often recording musings about their vegetable patch in essays and poems.” Ming dynasty vegetable gardens were located near the home, and arranged in rectangular plots called qi. A wall or hedge usually surrounded them. It is worthwhile to note that these spaces were apart of a spiritual quest, as the ancient Chinese philosophy of Daoism attempts to bring harmony between humans and the natural world. Seekers of the Dao contemplated the rhythms, cycles, forces, and both contradictory and complementary that animates the world. Ming scholars considered vegetable gardening and agricultural activities ennobling pursuits in part because of the spiritual contemplation that they afforded.

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5 Comito, Terry. (1986) The Humanist Garden
6 Pennington, Susan J. (2002) Feast Your Eyes
The connection between intellect and the garden blossomed in the Renaissance. Bernard Palissy, a great 16th century thinker, designer, scientist and artist, lived in a time when the Catholic church was plagued with "society people obsessed with luxury, dishonest merchants, and a corrupt clergy." Palissy was a protestant reformer at the forefront of the fight against folly which referred to "Catholic clergy, business men, officials and court nobles who leave to ignorant peasants the cultivation of the land." He firmly believed that a widespread return to man's first activity, agriculture, would lead to a betterment of society. Yet he believed the proper cultivation of the land to be impossible without the wisdom of the secrets of nature. These secrets, he found, were the in the forms of rocks, plants and crystals, and in the circulation of

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7 Lecoq, Anne Marie. (1986) The Garden and Wisdom of Bernard Palissy
water. Specifically, Palissy found geometric patterns in nature and suggested that the garden's very situation would obey those geometric natural laws.\(^8\)

Palissy’s fight against the destruction of nature by land hungry Catholics, would consist of putting together three geometrically designed architectural projects. One of these works was a garden, and he writes, “it (the garden) is as delectable and useful an invention as was ever seen.”\(^7\) The entire creation of the garden would be a pronunciation of the wisdom of god, which can be found in the forms of nature. The result was the creation of a grid with nine salient points (which he found in forms of crystalline rocks), which served as the basis for cosmological and astrological ideograms in the middle Ages, renaissance and the seventeenth century.\(^8\)

The reformation encouraged a return to the land and the rustic, rural life. The time-honored art of agriculture became popular again in France in the second half of the sixteenth century. This trend marked the beginning of a rich tradition in France, and the development of a garden that became known as the “potager” or soup garden. Much like the monastic garden, the potager included vegetables, herbs and flowers and was located just off the back door of the main house. The small-enclosed potager contained all ingredients for a nourishing soup that would feed an entire family.

As the Enlightenment (1700 – 1850 AD) began to spread the age of reason to Europe, the enclosed garden evolved into complex polygonal shapes that could be easily adapted and expanded as needed. The geometrical design of these gardens not only facilitated the organization of food and medicinal species, but also reflected the beliefs associated with astrology, which played an

\(^8\) See figure 6
Figure 6 Palissy's geometric garden plans

Figure 7
The Gardens at Padua and Leiden, Italy 1640
Important role in the development of the natural sciences.

Thomas Jefferson, the third president of the United States, and a strong believer in the agrarian ideal, had numerous gardens on his plantation home, Monticello. Jefferson was known for his vast knowledge and passion for horticultural matters. His interests were mostly in a scientific or practical subject, however he also considered other ornamental features of plants. He discussed planting an arbor of different flowering shades of the scarlet runner bean, arranged adjacent rows of purple, white, and green sprouting broccoli, and he bordered his tomato square with sesame or okra, a rather unusual juxtaposition of plant textures. Cherry trees were also planted along the "long, grass walk" of the garden to provide shade.

"It [agriculture] is at the same time the most tranquil, healthy, and independent [occupation]." (TJ to J. N. Déménier, Writings, 1028)

"Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bands." (TJ to John Jay, B.8.426)
Each of these gardens contributes to modern counterparts. Specifically, they inform spatial design through bed size and layout, circulation, plant combinations, and water storage and use. From absolute grandeur to simple kitchen gardens, these examples remind us of the possibility each piece of land can hold. In many cases we are reminded of the contemplative and spiritual element present when we connect with the sowing, harvesting and eating of our food.

In the 20th century, the productive garden gave way to the more ornamental and picturesque garden style. The vegetable garden became a utilitarian piece of land accustomed to newly invented farm machinery. With the exception of War Gardens and Victory Gardens in North America (1917 - 1919 & 1942 - 1946), (response to food and labor shortages during both world wars), delight in the vegetable garden was diminished. The long, linear rows of singular species lacked the form, color, texture and magic that these spaces once had. Often, productive gardens were moved to unseen areas, and were developed to produce maximum results in a short amount of time. With the development of pesticides and commercial fertilizers, huge monocultures became the dominant type of productive landscape. Even today, industrial agriculture continues to devastate not only ecological systems, but also our own health and sense of beauty and community.
3 The Importance of Urban Agriculture and the Necessity of Form

We are currently at a crossroads in contemporary society. Most city dwellers rely on the importation of food and agricultural products. These people have little or no knowledge over where and how their food is produced; and what they eat is now apart of a corporate agenda. Yet, growing food in the city can help people regain a sense of economic independence, while providing healthy, delicious food. Gardening can also facilitate social interaction, and residents can share in the ceremonies of growing, cooking and eating food.

While urban agriculture is known for its positive effects on communities, Kitchen Gardens are a unique version because they are productive and aesthetically pleasing. "One of the best sources of positive spatial character is clarity of overall form; this occurs most convincingly when one can readily perceive the limits and boundaries of the space, the vertical planes of masonry or vegetation implied or explicit that contain it. A space this clearly bounded is felt to have integrity, to be something in and of itself; its form and size are unambiguous."¹

The Kitchen garden is a spatially distinct element whose lines derive from a purely functional beginning. As time passed, Kitchen gardens developed a sense of mystery of what lies behind their garden walls, where inside, diversity and complexity of plant material heightened the sense of smell, sight and taste bud. The kitchen garden is separate, but connected; it is whole, yet part of a greater landscape.

¹ Newton, Norman T. (1971) Design on the Land
Site Context and History

The fertile river valley of the Fraser River gives structure to the lower mainland of British Columbia. First Nations settlements have existed along the river for centuries. According to Musqueam tradition, the village of Tsukhulehmulth once occupied a site on the Vancouver shore of the Stalo (Fraser River) just to the east of Mitchell Island. An ancient trail ran along the high ground just above the Fraser River floodplain from Musqueam village eastwards, past Tsukhulehmulth to Musqueam settlements at what later became Sapperton in New Westminster. For the most part, these cultures were hunters and gatherers, living off the abundance of fish, game and berries. However, some food plants were cultivated for use in the fertile soil, namely varieties of the potato.¹

Figure 10
Musqueam longhouse

As Europeans settled the Vancouver area, the need for agriculture increased. One of the areas used for agriculture was Vancouver’s south central slope. This area remained uninhabited by permanent settlers until the construction of the North Arm wagon road in 1875 made farming more viable. This road, following the route of present-day Fraser Street, connected the rich farmland along the Fraser River to their markets in the sawmills and logging camps on Burrard

Inlet. The following year customers in New Westminster became more accessible when the old riverside trail was upgraded to a road (later called River Road, then South East Marine Drive). The fertile land along the Fraser River quickly developed with farms and "Chinese vegetable gardens" that supplied most Vancouver families with fresh vegetables delivered door to door by horse-drawn wagon. Later these developed into "truck gardens" operated by Chinese and Sikh settlers. Many residents grew their own vegetables and fruit trees and kept farm animals. A honey competition and goat show were the highlights of the 5th annual South Vancouver Horticultural Association and Farmers' Institute Exhibition and Fair in 1890.¹

The flatlands between the railroad tracks continued as a prime agricultural site until it was turned over to the logging industry in the early 1900s. Until recently, the area remained a log mill and sort area owned by the paper company, Weyerhaeuser.

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Figure 11
Historical Map of Fraserlands delineating logging companies
5 Site Analysis

East Fraserlands is located on the north shore of the Fraser River at Boundary Rd and Kerr St., in the eastern most section of the City along the north arm of the Fraser River. The area is classified as a Brownfield site, and is still owned in part by Weyerhaeuser Corporation. It is primarily an industrial landscape, consisting of paved surfaces and little to no vegetation.

Figure 12
Fraserlands site looking south from railroad tracks

Figure 13
Fraserlands site from the river
Figure 14
Site photo looking West from Boundary Rd

Figure 15
Site Photo looking south from railroad tracks

Figure 16
Riverbank looking east

Figure 17
Riverbank looking West
The surrounding lands are residential with some commercial/office spaces to the east, in Burnaby. There are several parks, surrounding the site, which contribute to the ecological health of the area, and provide residents with recreational opportunities.¹

Figure 18
East Fraserlands adjacent parklands

Vegetation is limited to the riverbanks and roadsides, with a few areas of early successional plants, a stand of red alder, and various berry thickets. The condition of the riverbanks is primarily composed of boulders and low brush, with some exposed piping draining to the river. The topography change between the railroad tracks and the river is minimal, with the slope rising northward toward southwest marine drive.³ From the high tide mark to the top of bank is approximately 1 meter, with a tidal change fluctuation of 4 meters.

¹ figure 18
² see figure 20
³ 17
The City of Vancouver recently showcased plans to redevelop the area into a residential community. The Proposed Open Space Plan highlights the green areas and pedestrian connections throughout the site. These include: the waterfront walkway (±3 acres); three parks (totaling ±12 acres); the green corridor from Kinross Ravine Park down to the river; and the rest of the public realm (streets).

Figure 19
City of Vancouver Community Plan for East Frasrlands
5.1 Opportunities

Several positive factors are present which contribute to the formation of a community based on kitchen gardens.

1. The rich agricultural history of the site provides a strong and meaningful foundation from which to build a community based on kitchen gardens.

2. As stated earlier, a survey was conducted by the City of Vancouver, which found residents in the surrounding areas to have an interest in community gardens.

3. The flat south facing riverbank is an ideal location for urban agriculture.

4. The current City of Vancouver plan includes open space components that can be modified to suit the formation of Kitchen gardens.

Figure 20: An Opportunity
East Fraserlands Topographical Map with aerial underlay demonstrating the flat nature of the site
5.2 Constraints

There are five major constraints that exist in the City of Vancouver's current development plan that work against the creation of a kitchen garden community.

These are:

1. Creosote pollution – an area on the waterfront has been determined to have elevated levels of creosote. It has been determined to be non-migrating, but is in need of remediation.

![Figure 21 Constraint](Image)

Area of Creosote Pollution

2. Managing the landscape -- According to the City of Vancouver’s Bylaws, the city will not manage nut or fruit trees. Therefore, the community must include people willing to manage and harvest fruit trees along the community streets and in an orchard area. The city calls for a non-profit organization be set up amongst the local community to manage
this. This could become a hindrance if the residents of the community are not interested in urban agriculture.

3. Amount of space -- According to the proposed City of Vancouver plan, the waterfront is recognized as a public space, however in my opinion, it does not contain ample space to be a functioning part of the public domain. Housing is planned on the waterfront, leaving minimal space for recreation. Additionally, Local residents have made reference to the overall amount of open space, saying “there is not enough open space for 10,000 people”\(^6\)

4. Current Housing configuration – The overall building layout, while not the focus of this study, became an important element in determining which spaces receive ample sunlight for gardens. The spatial configuration of the buildings is not ideal for maximizing sun exposure. A Sun/shade analysis was completed to determine the amount of sunlight available throughout the year.\(^7\)

5. Building construction – The current plan calls for traditional building methods, which do not take rooftops gardens into consideration. The structures of apartment buildings need to be able to support the load of these gardens, as well as garden structures and materials.

\(^6\) City of Vancouver. (2002) Public Survey
\(^7\) see figure 22
Figure 22
Fraserlands Shadow Study
Light gray – summer
Black - winter
Figure 23
City of Vancouver Building Layout and plantable space

Figure 24
Reconfigured Building Layout and plantable space
5.3 An Analysis of Potential Garden Production

In order to determine and justify how much space to allocate to kitchen gardens, a productivity analysis was completed. This is a process that takes into account the number of people living in the community, and the amount of space needed to provide food for these people.

An estimated 20% of the population at East Fraserlands is projected to be interested in the concept of growing food in a plot near their building or in the community garden. Kitchen garden plots will vary in size depending on availability of space and individual requirements. However, the following guidelines indicate what can be expected from plots of different sizes.

1. 100 or 150 sq ft (9 sq m or 12 sq m) small size, will provide salads and tomatoes annually for a four person family

2. 200 or 250 sq ft (18 sq m or 23 sq m) medium size, beans, onions, one or more kind of fruits, and additional money saving crop annually for a four person family

3. 600 sq ft (54 sq m) this is sufficient for a full size domestic kitchen garden annually for a four person family

4. 800 sq ft (74 sq m) add main crop potatoes annually for a four person family

Allotment Gardens

As previously stated, the population of East Fraeserlands is expected to be 10,000 residents. 20% of 10,000 = 2,000 residents interested in having a plot

2,000/4 (as calculated by Bowe) = 500

500 x 9sq m = 4500 sq meters.

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8 SEFC (2002) Urban Agriculture Strategy
This is the ideal amount of space for East Fraserland kitchen gardens and will be allocated in a range of typologies.

Restaurant Garden

The restaurant will feed approximately 250 people on any one day.

\[
250 / 4 \text{ (as calculated by Bowe)} = 62.5 \times 54 \text{ sq meters} = 3375 \text{ sq meters}
\]

Based on the number of patrons in the restaurant, \textbf{3375 sq meters} is the ideal amount of kitchen garden space required for the restaurant garden.

The ideal amount of space to be allocated to kitchen gardens has been determined based on the number of people that live in East Fraserlands, and the number of patrons in the restaurant.

The spatiality of these kitchen gardens will exist over various typological forms. As previously stated, the typologies represent a range of public – private and interstitial spaces, which are informed by the following typological precedents.
6 Typological Precedents

6.1 Restaurant Gardens (semi public)

Sooke Harbour House, Sooke BC Canada

This is an upscale hotel with its own restaurant garden. The garden is known for its lovely setting and organic production. Guests stroll through the garden at all times, and there are several places to sit and take in the view around you and out to the sea. Plants range from herbs and vegetables to edible and cutting flowers. An intriguing aspect of the dining area is that it extrudes out into the garden with doors that can remain shut or open up into a patio. Therefore, the dining experience provides the dialectic of being both within and looking to the garden.
Fairmont Hotel Rooftop, Vancouver BC Canada

In 1994, the south side of the Fairmont Hotel Vancouver roof was converted to an herb garden. The garden measures 195.1 sq meters (2,100 sq. ft.) with a soil depth of 45.7 cm (18 in.). It comprises 11 beds of various shapes, each one amended to accommodate the herbs' needs accordingly. This is a good example of maximizing space in an urban environment. The chef and kitchen staff is instrumental in the maintenance of the garden. The design of the garden was created for people to primarily view, not occupy. The roof top location limits the amount of traffic through the garden to hotel guests, and staff. The surrounding buildings and the hotel itself take in the view of the intricate beds.

Figure 28
Fairmont Vancouver Roof Garden
Streets of Seville, Spain

The people of Islam made their way to southern Spain in the early 900s. An enlightened culture at the time, the northern African Muslims contributed to many architectural and garden projects. The Muslims created grand spaces such as the Alhambra with spectacular courtyard gardens, and also lined their streets with beautiful fruit trees. They brought to Spain the famous bitter oranges that line many of Seville's streets and promenades. These trees still contribute to many aspects of modern life in Seville. Each spring under the orange tree blossoms, there occurs a springtime festival of Easter. When the fruit are ripe for picking, many people gather in the streets and collect oranges to make orange marmalade.

Figures 29,30
Orange Trees in Seville, Spain
6.3 Community Garden (public)

Brooklyn Community Gardens, NY, New York

During the 1970's, New York Neighborhood activists did what the City could not do; they used community gardens as a powerful way to make New York whole and healthy again. Their efforts successfully anchored and revitalized neighborhoods and, in the process, community gardens wrought a significant change on the urban landscape.

Community gardens existed in New York before the 1970's. The Depression of the 1890's and the Great Depression of the 1930's spurred many municipalities, including New York, to permit citizens to grow food on city-owned land. The two world wars with their accompanying food shortages brought about Liberty and Victory Gardens. However, these were temporary measures, abandoned as the precipitating crises passed. New York's community gardening movement grew out of the fiscal crisis of the mid-1970's, but it laid down deep roots.

Figures 31, 32
Brooklyn Community Garden
Above: 1998
Below: 1912
Figure 33
Graphic breakdown of typological groups as they occur on the site
6.4 Residential Yards and Rooftops (private)

These gardens include single-family yards, multi family balconies and patios, and rooftops gardens. These gardens are simply the property of the owner or renter, and suit the needs of the individual or family. While the aspect of community is lessened by the privatization, opportunities for social interaction occur by merely being outside, especially in a multi family or high density situation. A distinction from public gardens is that the individual manages his or her own plot at will, and it is generally not available to the public.

Figure 34
Toronto Housing Project Rooftop Vegetable Garden

Figure 35
Rooftop Herb garden in Copenhagen, Denmark
6.5 Interstitial Spaces and Adjacencies

This category includes gardens on irregular-sized and small plots in between houses and apartment complexes, unused portions of property, and rail road right of ways. Such plots may be very small when considered individually, but can be extensively distributed throughout the city and across neighborhoods.

The Arbutus Corridor was once an active railway in Vancouver. The tracks are now home to the Cypress community gardens, providing local residents with lovely views and delicious produce. The gardens are not only productive and beautiful, but also provide space for gathering and learning.

Figures 36,37
Cypress Community Garden on Arbutus Railroad Tracks
Istanbul, Turkey

Throughout the city, vegetables and herbs are grown in any bare patch of soil. They are apart of the urban fabric and provide communities with much needed green space, in addition to extra food.

Figure 38,39
Gardens in Interstitial spaces in Istanbul, Turkey
7 Program

East Fraserlands, as a Kitchen Garden community, is a web of garden spaces that provides residents and visitors with a unique and aesthetically pleasing experience, while providing food and bringing the act of growing and eating together.

When looked at more closely, a kitchen garden community has four major attributes.

1. Civic Spirit – tending a garden is conducive to being outside and interacting with others.
   Festivals and communal meals bring all types of people together
2. Health – food that is harvested at the proper time, and grown without pesticides contains more nutrition value and taste.
3. Spirituality – the creation of kitchen gardens fosters a connection to the natural world, and their spatial forms are linked to historical periods that associated the garden with spirituality.
4. Ecology – kitchen gardens result in a reduction of imported goods, and large-scale agriculture, which harms water sources and soils.

Gardens are grouped into various typologies, each garden to be unique through its variance in size, spatial relationships and management scheme.

7.1 Restaurant and Garden:

The restaurant garden is a place of business and also the heart of the community. It is a place where community members clean and prepare their food, and a venue for feasts and festivals.

The community hall is a designated part of the building specifically for the use of the community. This area will serve as the basis of operations for all the gardens in East Fraserlands.
Community members and guests can come to the garden and learn about the benefits of locally grown foods, while enjoying the lovely setting.

A link to the spirituality in growing and harvesting food will be developed through weekly services and workshops, the garden and building can be used for these special sessions.

This typology is the most complex because it involves two areas that are spatially distinct, but must also be bound together. The overall siting of the restaurant and garden must in a place with high visibility. It must also be designed to limit public access during non business hours. During business hours, however, it must be both convenient and safe for the general public, as well as the community. Additionally, the location must receive adequate sunlight and have access to the city water system.

Upon further examination, several key relationships between the restaurant and garden emerge.

- The restaurant must be clearly accessible from the garden and vice versa. Access should exist in two forms:
  1. Restaurant patrons – access will be near the dining area away from the work room and garden maintenance area
  2. Staff/community members – access away from dining areas

- Several view corridors need to be accounted for. These are:
  1. The view to the river from the restaurant
  2. View to the garden from the restaurant
  3. View to the river from the garden

- The restaurant and garden needs to be not only a place of business, but also a place for community education, and gathering.
  1. The site must provide indoor facilities for office space, communal eating and education,
  2. Dining space for restaurant guests and staff.
  3. Garden sitting space

- The restaurant should have several presences
1. The commercial street
2. The waterfront/open space
3. Intimate Garden

As stated previously, the restaurant will serve an average of 250 people per day, whose food will be mainly produced in the adjacent gardens. The ideal amount of space is approximately 3375 sq meters for a garden. The garden will be walled to prevent vandalism and to provide additional warmth through wind block and heat absorption. The Activities that will ensue in the garden include daily garden maintenance, eating, passive activity such as sitting, observing and meditating, gardening and cooking classes, and community gathering and celebration.

The following is a breakdown of the separate components that make up the restaurant and garden.

Kitchen

The Kitchen area is to be used primarily by the restaurant staff, but must also be large enough to be used by the community, simultaneously. Community events may take place weekly, and include activities such as cooking classes, community dinners, and workshops. The kitchen must have access for residents to use that is not directly through the dining area. The kitchen area must also contain a separate workroom, where vegetables are gathered and stored. This area must also be large enough to accommodate workshops and cooking classes. This room must have a separate entrance to the garden area for staff and community residents to use. The compost area should be located just off the kitchen workroom, yet close to the garden, allowing for convenient access. It is ideal for the compost area to be located out of sight and smell of the dining area.

Dining Rooms

Overall seating must be maximum capacity of 150 people (not including community banquet room), with tables of various sizes. Seating must represent a range of options to maximize
different dining experiences. The main experiential seating options are: outdoor garden seating, outdoor river view seating, indoor garden viewing, and indoor river viewing.

Community Hall

Office space for 1-2 community garden workers, who run the non profit necessary to manage the community gardens, street market and community events. Storage space for market street tents and other furniture must be allocated.

The Community Banquet Room is available for community use, and must be able to accommodate for public lectures, classes, and workshops. The must be fit to hold several banquet tables for community festivals and meals. This room may also be rented out for private parties.

Sheds

These structures must be able to hold gardening tools and supplies, and also double as a small greenhouse in the winter. Additionally, sitting space is necessary for visitors and workers.

These structures should speak to the overall architectural type of the area.
This space should allow for several key activities such as parking, walking, sitting, biking, shopping and harvesting.

The street should provide parking for 20 -30 cars. When the market is in session, the street becomes open for merchant parking only.

Movable furniture is available for use by merchants and is also stored in the community room.

The street must be designed for the setup of market stalls, which would close the street to non-vendor traffic during market hours. A distinct paving will mark this street as having a special use unlike that of other streets. Market tents will be stored in the community room and are free for local merchants. Harvesting fruit and chestnuts in the fall will also close the street down for a celebration and outdoor roast.
7.3 Community Garden - orchard + gardens

The siting of the community kitchen garden should be accessible to the community by foot and vehicle. Therefore, it should be located close to residents' homes, and a major neighborhood street.

The gardens should remain open at all times, or follow the city's bylaws on park hours of operation. While not entirely enclosed, the gardens should be clearly delineated from the surrounding community. This can occur through vegetative barriers, structural barriers and spatial location (i.e. city block).

The garden should have several sheds available for storing garden tools and supplies, and for sitting and gathering out of inclement weather. Shed should be located close to a main neighborhood street where unloading and loading materials is convenient. It is also possible for these structures to function as a street façade, which not only delineates space, but also gives unique life to the street.

The community kitchen garden should contain Open Space for gathering, and passive activity. This space could also be changed to garden plots if interest in community gardening increases.

The community garden should also contain working plots for children, which are easily accessed. This space should be for children's classes, play and gardening. It should be located in proximity to the shed area, for maximum exposure and observation. Seating should be provided.

Orchard

The apple orchard can function both as park space, and as a source of income for the community. The orchard should contain picnic style table for eating and outdoor cooking facilities.
8 Design Proposals

8.1 Overall Design Moves

After careful analysis, it was determined that a shift in apartment building orientation and/or locations would allow more central, open areas for planting gardens. Many of the buildings were reconfigured to create south facing courtyards. These spaces are recognized, but for the purposed of this project, not designed in detail.

Specific overall design moves:

1. Two buildings along the waterfront were moved to the area marked as a “passive park” opening up a continuous waterfront corridor.

2. A street running east west was added just north of the restaurant garden, allowing access and improving circulation.

3. Commercial buildings were added north of the restaurant, to continue the flow of pedestrian traffic down to the restaurant and river.

4. Streets are planted with fruit and nut trees (major streets with larger chestnut or walnut, smaller streets with apple, pear or cherry trees)

A comparison of The City of Vancouver’s plan (as adapted from figure) versus the newly configured layout can be seen on the following page.
Figures 40, 41
Building Configurations
Figure 42
Finalized Building Layout
Figure 43
East Fraserlands Site Plan
8.2 Grading and Drainage

Due to the minimal elevation change of the existing river floodplain, and the focus on productive landscapes, topographical intervention was limited. Two interventions were initiated, however, with minimal elevation change. The first is an overall grade change that mimics the dykes characteristic along the Fraser River. The area along the river was raised 1.5 meters from the existing elevation of 1 m above the high tide mark, with a gradual slope (3 %) throughout the site down to Garden Avenue. This creates a slightly raised position along the waterfront, from which to view both the river and the surrounding gardens. The second topographical intervention is within the restaurant garden. This area was divided into a series of garden “steps” which allow for superior viewing of the garden and river from the main entrances and restaurant. Additionally, the slopes support a water collection system to be initiated for the gathering, cleansing and storing of water for the garden. The main path contains a water collection and transport “rill” which feeds into the main cistern. The top of the rim cistern is located 1 meter below the elevation of the north and south entrance.

8.3 Circulation

A hierarchy of pathways is introduced to the site. Streets are the primary route of transportation for cars and people. These are designed to be garden streets, with ample fruit and nut trees, wide sidewalks, and on street parking. A secondary system of pressed brick pedestrian walks run through the community, south to the gardens and to the waterfront. A tertiary system of bark chip paths lie in the interior of the community garden and orchard. The waterfront promenade is composed of a pedestrian bikeway and walkway. These areas are also pressed brick. The wooden pier area around the restaurant is designed to be reminiscent of the logging piers that existed previously on the site, while providing a truly maritime experience.

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1 see Appendix A, page 53
2 see Appendix A, page 54
8.4 Restaurant + Garden

The siting of the restaurant and garden was determined by several key factors.¹

- The position on Market Street gives the area high visibility and easy access to both visitors and locals. The waterfront location also maximizes views to the river, and takes advantage of its location along a prominent open space.
- Two main orientations, one along high street, and one along the garden, speak to the two main uses the building has – the restaurant and the community space.
- Ample sun exposure directly on the waterfront.

The restaurant garden was designed with several intentions.²

To have the highest productivity possible

Approximately 2500 sq meters was allocated to restaurant garden space. This number is less than the amount calculated previously, however, it is a more reasonable size based on the busy schedule of the kitchen staff. Additionally, rectangular beds are the simplest to rotate various crops each year. When kept to a smaller size, these beds are easily tilled, planted and harvested. Raised beds also provide some respite from predatory animals such as house pets and children.

The Orchard is located just to the west if the garden, just next to the river. “Generally the most favorable districts for growing fruit are those which lie alongside a lake or big river. The presence of a comparatively large body of water in the vicinity exercises a beneficially moderating influence upon orchard trees, chiefly by regulating the temperature at times of high heat or cold.”³

¹ see Appendix A, page 53
² see Appendix A, page 54
³ Bealby, John T. (1912)
To be apart of the waterfront open space corridor

The kitchen gardens provide space for recreation, passive and active. While garden access is regulated, a visual access is maintained at all times through transparencies at the gates. The height of the garden walls is 1.5m, which allows visual access to some individuals.

To unite the restaurant and garden

The garden is an extension of the building with indoor dining areas transitioning into outdoor seating. The walls of the building extend outwards, and transition into garden walls, keeping the sense of enclosure. The garden and building also work together capturing and storing water. Water is collected from a section of the restaurant roof, fed down via a series of exposed pipes, and flows into a stormwater garden with grasses and reeds for filtering. The water then flows via a simple Islamic inspired rill cut into the main pathway on the central pathway. This system has an overflow drain in the bottom of the reed planting bed as well as within the bottom of the cistern. The cistern is designed to hold water for the garden, and serve as a storage reservoir in the dry summer months. It is also a water feature with a fountain to maintain water circulation.

To create a grand space to occupy and view

The garden is divided into sections with various plant groupings and classifications. The areas on the main path are designed for heightened olfactory experience, while other areas are designated according to salad, herb and color. There is a direct resemblance to historical garden forms through the use of brick walls, a central water feature and bed layout. This reference is made with hopes of inspiring visitors to learn more about their connection to the land and spirituality, while simply providing an enclosed haven for reflection and contemplation.

To provide ease of maintenance for garden workers

Seating is available on some raised beds, and can assist in gardening tasks. Each bed is a maximum of 1 meter in width, to alleviate difficult access to all plants in the bed. The lengths of the beds vary. ¹

¹ See Appendix B for planting areas and names
8.5 Street Design
The street is a place with many uses. In East Fraserlands, the streets too are designed to be productive, useful and beautiful. The main commercial street, Market St, is planted with fruit trees, while Garden Avenue is planted with Chinese Chestnut. Nut streets such as Garden Avenue will be planted with a spacing of 8 meters on center for Chinese Chestnut and Walnut. Market Street is planted with pear and apple trees, in double rows, emphasizing a grand boulevard at a community scale.

Market Street is the site of the Fraserlands market, which occurs regularly most of the year. It is also a site for community fairs, block parties and chestnut roasts in the fall. To accommodate the influx of people and merchants, most neighborhood streets have on street parking, with a pervious surface to allow water infiltration.

Market Street is planted with herbs and vegetables in sidewalks and traffic bulges. These spaces brim with colorful and tasteful herbs and edible flowers, adding to the delight of the passer by. Streets have a limited plantable area than other types of Kitchen gardens, however the summation of their parts is considerable.

8.6 Community Garden Design
The layout of the community kitchen garden is designed to accommodate as many plots as possible, while maintaining a clear spatial form. The exact layout and composition of the plots is left to the individual, however a general framework was developed. This framework designated the paths, planting areas, open space, and shed structures.

The main axis of shed space is just off Garden Avenue, and extends the length of the site. These structures are located there to maximize ease of transporting garden materials and produce, while providing a “gateway” to the garden area. Located with these structures is the children’s garden and demonstration garden, placed for maximum visibility and access.
9 Conclusion

The creation of a Kitchen Garden community in East Fraserlands is a beautiful and productive alternative to the current community plan. Not only does this type of community contribute to food security, it enlivens a sense of civic spirit, creates beautiful green spaces, and opens up a valuable waterfront open space corridor. It is a real example of sustainability for the reason that it recognizes the need for economic, social and ecological well-being.

A Kitchen garden community can also provide a powerful link to the past.

"In order to travel towards the future, it is necessary to walk towards the pure clarity of the past" (Caruncho in Medieval Gardens)

As the trend of western civilization becomes more dependent on technology, I believe that a reconnection to the land is necessary for our well-being, and survival. The contemporary kitchen garden is an artistic ingredient that has the possibility of making communities a more beautiful and healthy place. Above and beyond this, I cannot think of a more captivating way to live than to bring back the ritual of growing and celebrating one's own food.
Bibliography


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Site History

According to Musqueam tradition, the village of Tsu-chu-lum-tha once occupied a site on the Vancouver shore of the Stalo (Fraser River) just to the east of Mitchell Island. An ancient trail ran along the high ground just above the Fraser River floodplain from Musqueam village southeastwards, past Tsu-chu-lum-tha to Musqueam settlements at what later became Seattle. First Nations gathered shellfish, fruit and berries and grew edible roots and the wapato or Indian potato, which grew beside the Fraser.

Vancouver's south central slope remained unoccupied by permanent settlers until the construction of the North Arm wagon road in 1876 made farming more viable. This road, following the route of present-day Fraser Street, connected the rich farmland along the Fraser River to their markets in the sawmills and logging camps on Burrard Inlet. The following year customers in New Westminster became more accessible when the old riverside trail was upgraded to a road (later called River Road, then South East Marine Drive).

The fertile land along the Fraser River had been quickly developed with farms and "Chinese vegetable gardens" that supplied most Vancouver families with fresh vegetables delivered door to door by horse-drawn wagon. These developed into "truck gardens" operated by Chinese and Sikh settlers. Many residents grew their own vegetables and kept farm animals. A honey competition and goat show were the highlights of the 5th annual South Vancouver Horticultural Association and Farmers' Institute Exhibition and Fair in 1925.

Gradually industries such as sawmills began to replace the farmland between the rail line and the Fraser River and by the 1950s all of the flat farmland had been taken over by large industrial operations.

The East Fraserlands is located in the southeast corner of the city on the Fraser River. It comprises 15 acres of land that has been zoned for industrial use. There are a number of different owners, the largest of which are Weyerhaeuser and the City of Vancouver.

For over 80 years the area was home to the Canadian White Pine Sawmill. Over the past year the mill has been closed and demolished. The two largest owners have asked the City to consider development options for the site. The current plan explores a mix of land uses including residential, recreational and commercial uses.
Kitchen Garden Expanded: the marriage of form and function

Typologies of Contemporary Kitchen Gardens

Restaurant + Gardener

Sooke Harbour House, Sooke BC

Community Garden

Brooklyn Community Garden, NY

Street

Katie Murray
UBC MLA, Thesis 2004
Kitchen Garden Expanded: the marriage of form and function in East Fraseland

Geometric forms are linked to increased overall production, scientific classifications and spiritual and astrological beliefs.

East Fraseland is a web of East Fraseland Community that is productive, beautiful and meaningful. It is an intricate web of garden that creates a sustainable whole, ready for the future while recognizing the past.
Kitchen Garden Expanded:
the marriage of form and function

Restaurant + Garden

Scale: 5m, 10m, 20m
Market St is a Kitchen Garden laden with fruit trees and planted with herbs and flowers. It is a productive public space that also is a venue for the public market, community fairs, and harvest celebrations. It is the main commercial street as well as the heart of the community.
Appendix B
Planting List

Restaurant Garden
Herb Garden

Fragaria vesca alpine strawberry
Anethum graveolens dill
Aloysia triphylla lemon verbena
Achillea taygetea pale yellow yarrow

Digitalis grandiflora yellow foxglove
Thymus vulgaris French thyme
Origanum heracleoticum Greek Oregano
Petroselinum crispum curly parsley

Ocimum basilicum purple basil

Hyssopus officinalis blue hyssop

Origanum majorana sweet majorum

Artemesia drancunculus French tarragon

Allium schoenoprasum chive

Magnolia virginiana sweet bay

Scented Garden

Chamaemelum nobile chamomile
Viola cornuta blue perfection viola

Satureja montana winter savory

Lavandula angustifolia lavender

Myrtus communis dwarf myrtle

Citrus limon ponderosa lemon

59
Cupressus sempervirens itallian cypress

Salad Garden
Capsicum annum ornamental pepper
Lycopersicon cerasiforme cherry tomato
Brassica oleracea cabbage
Allium cepa shallot
Allium schoenoprasum chive
Allium tuberosum garlic chive
Allium cepa Egyptian onion
Allium graveolens celery
Beta vulgaris swiss chard
Capsicum annum sweet pepper
Solanum melongena eggplant
Lactuca satvia oak leaf lettuce
Brassica oleracea red flowered kale
Brassica oleracea brussel sprouts
Cichorium intybus Chicory

Street
Castanea mollissima Chinese Chesnut
Juglans regia walnut
Malus manzana Apple
Pyrus communis Pear
Prunus penslyvanica Pin cherry

60
Bulge Planting

*Monarda didyma* bee balm

*Salvia officinalis* garden sage

*Foeniculum vulgare* fennel

*Santolina chamaedrys* gray santolina

*Artemisia dracunculus* french tarragon

*Thymus citriodorus* lemon thyme

*Pulmonaria officinalis* blue lungwort

Community Garden

Main plots

To be determined by the individuals

Edging plots at each corner

*Calendula officinalis*

*Tropaeolum minus* nasturtium

*Buxus sempervirens* dwarf edging box

*Cupressus sempervirens* Italian cypress

*Citrus limon* Ponderosa lemon

Children’s Garden

*Levisticum officinale* lovage

*Ocimum basilicum* purple basil

*Borago officinalis* borage
Lavandula angustifolia English lavender

Dianthus plumarius cottage pink

Ocimum basilicum bush basil

Petroselinum crispum curly parsley