THESIS REPORT

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January 9, 2017

FOOD FOR THOUGHT

where the public can interact, familiarise themselves and participate in the production of food

FOOD FOR THOUGHT

Table of Contents

Project Outline

Project Statement

The industrial farming practices of "Big Agra" are at odds with urban society's social nutritional and ecological needs. Creating a facility where the public can interact, familiarise themselves and participate in the production of food in a dense urban environment will provide a missing social link for urban communities and help reconnect urban dwellers with the time honoured tradition and the satisfaction of growing one's own food.

Background

For many of us, the image of farm and farmer is that of a hardworking man or woman in denim overalls looking across sprawling green fields with a red barn in the distance and a quiet homestead with a large open porch. This image is from another time, likely enhanced for us through movies, television and advertising and is sadly inaccurate. The disparity of this bucolic scene and the reality of the modern industrialized farm is startling and contributes to the general disconnect we have between what is on our plates at meal times and our understanding of where it comes from, how it is made and who produced it.

We live in an era in which much of the food we eat is produced through large scale industrial farming methods on factory farms which are often located thousands of miles away. This type of farming is generally run by large corporate entities whose underlying obligation is to make a profit and the production of food is only a means to that end. This generally necessitates growing only those crops in which the demand and ease of production ensure the required profit margins are met. The unfortunate by-products of this include a host of issues such as reduced selection for the consumer, the use of GMO plants, degradation of the soil, polluting runoff into local waterways due to the use of massive quantities of pesticides, herbicides and fertilizer as well as the displacement of the natural environment with seemingly endless landscapes of mono-cultures. Negative environmental impacts from this type of food production extend beyond the physical limits of the farm due to the significant amounts of fossil fuels consumed transporting product great distances to the final points of sale and the copious production of greenhouse gases which go hand in hand with the production and use of fossil fuels.

Considering the continued growth in the world's population, the increase in size and density of cities worldwide and the negative impacts of the industrialized large scale farming model on the natural ecology, there is a need for an alternative method of food production. If food were to be grown and produced locally then its quality and availability could improve and its distribution costs could go down as the grower and the consumer are in close proximity. Growing food locally would also have a positive effect on our understanding of what we eat, where it comes from and what is required for food to be produced since the facilities for growing food crops would be part of the urban fabric. Further, this close relationship would have a positive impact on the natural ecology as less land would be required for traditional open field farming.

It is clear that due to the high land costs in urban settings that any proposal for farming in a dense urban environment would include a layered or stacked design. This idea has been in place since shortly after the sky scraper became part of the built city vernacular and is now commonly referred to as a "vertical farm". It is also clear that developers do not see the value in this sort of project as only a few examples have been built to date and none have been a purpose-built hi-rise dedicated entirely to vertical farming or incorporate a significant public component as part of their functional program.

Methodology

The resolution of the thesis level will require work in three separate consecutive segments to be completed. These segments include research, site selection and programing, and the building design project.

Research - semester one, 2014

This initial phase of the thesis level will include research into the timeline and significant developments that have brought North American society to our current state of disconnection with the food we eat. Research into the social impacts of the modern diet which include a significant portion of processed food and the effect on our behaviour related to the culture around the consumption of fast foods. Also, a review of case studies of projects related to the production of food indoors and in urban environments.

Site Selection and Programing – semester two, 2014

There are some things in this project which are known, for instance, the thesis general topic relates to dense urban environments and therefore the selected project site will be in a large urban metropolis. The eventual location will be selected based on the information drawn from the research phase of the project. Site analysis supported by both a computer generated model and a physical model will be part of this phase. This analysis combined with conclusions drawn from the research phase of the thesis will inform the program for the building design project. The programmatic components of the project will be determined during this phase.

Building and Design Project – semester one, 2015

The building design project will be the culmination of the first two phases of the thesis level. This project phase will include a completed building project in which the design amalgamates all previous information gathered with a final resolution reflecting the principal ideas of the thesis; the growing of food, the involvement of community and the movement of society towards having a deeper connection with the food we eat.

Proposal

It is my belief that food in all its various forms help define and bind communities together and that this connection has been diminished as a result of the increased size and density of cities and the profit driven actions of large scale agra-business. Until the growing of food is reintroduced into communities in dense urban environments modern families will miss out on the intimate, fulfilling and time honoured activity of gardening and contributing to the food eaten at the family dinner table.

I do not propose to design a vertical farm but rather a facility in a dense urban setting where the growing of food crops can be undertaken by small businesses, local community groups, families or individuals. This building could be a precursor to the actual vertical farm, a place accessible to the public where urban farming related activities could be conducted and a showpiece and resource for the urban farming movement and local community. Such a facility by its very existence and accessibility could aid in broadening public awareness about urban farming and food production and could strengthen the public's relationship with one of the key elements that ties communities together – food.

Literature Search

Howard, Albert. *The Soil and Health: A Study of Organic Agriculture (Culture of the Land)*. Lexington Kentucky. The University Press of Kentucky. 2006. Print. (originally published in 1947)

King, F.H. *Farmers of Forty Centuries: Organic farming in China, Korea, and Japan.* Mineola, New York. Dover Publications Inc. 2004. Print. (originally published in 1911 as *Farmers of Forty Centuries; or Permanent Agriculture in china, Korea and Japan)*

Martin Keogh, Michael Pollan, Barbara Kingsolver, and Alice Walker. *Hope Beneath Our Feet: Restoring Our Place in the Natural World*. Berkeley, California: North Atlantic Books, 2010. Print.

Pollan, Michael. *The Omnivores Dilemma: A Natural History of Four Meals.* Penguin Books. 2007. Print.

Berry, Wendell. *Bringing It to the Table: On Farming and Food.* Berkeley California. Counter Point Press. 2009. Print.

Despommier, Dickson. *The Vertical Farm.* New York. Thomas Dunne Books – An Imprint of St. Martin's Press. 2010. Print.

Ladner, Peter. *The Urban Food Revolution: Changing the Way We Feed Cities.* Canada. New Society Publishers. 2011. Print

FOOD FOR THOUGHT

TERM 1
RESEARCH

TERM 1 - Intent Concept Process Resolution

This first term of 2014 I undertook the research componant of my thesis project. As the general topic of my thesis is food and in particular “the industrial farming practices of Big Agra are at odds with urban society’s social, nutritional and ecological needs,” I made an effort to relate my research to the eventual conclusion of the thesis wihich would be a building project. For the midterm presentation I prepared three boards based on my research to that point. The organization of the boards was broken down into three catagories under the headings Statement, Drivers and Response. The Statement board reiterated my thesis statement and provided brief introduction to how our food related social, nutritional and ecological needs are not being met. Board 2, Drivers, outlined how food production is being negatively impacted. Catagories included urbanization, technology advancements, nutrition/health awarenes, capitalism/corporate profit, and environmental degradation. Board 3, response identified how society has addressed the disconnect with food. Responses include the creation of organizations for better food and public awareness, proposal for buildings including such ideas as vertical farming and examples fo real food production in urban environments.

The second term presentation included an additional 4 boards. These boards continued the graphic presentation of the thesis topic and covered the extent of my continued research. With the problem being identified, this second presentation addressed the more intimate relationship we have with food and covered the benefits of personal involvement of growing food locally such as the social, nutritional and ecological benefits. Through my research it became apparent that there are deep tensions within the food system which manafest in issues such as community food security and food democracy. Community quickly became a central theme of solutions as responses developed through personal relationships with like minded people and grew out of persnal interest and shared place. Although identified in the first half of the term it was during the second half that role of community gardens became the focus of my research. The need for personal and family gardening space in dense urban environments became apparent and are currently being addressed by the community gardens that are cropping up all around urban centers.

Included in my research were case studies of two communty garden/food centres that have become the hub of each of their neghborhoods, one in Toronto and one Berlin. My research identified that there is a need for community food centres in dense urban environments, places where community ties can be strengthened and where peoples relationships with food and each other can grow.

FOOD FOR THOUGHT STATEMENT

The industrial farming practices of "BIG AGRA" are at odds with urban society's social, nutritional and ecological needs.

Creating a facility where the public can interact, familiarise themselves and participate in the production of food in a dense urban environment will provide a missing social link for urban communities and help reconnect urban dwellers with the time honoured tradition and the satisfaction of growing one's own food.

It is my belief that food in all its various forms help define and bind communities together and that this connection has been diminished as a result of the increased size and density of cities and the profit driven actions of large scale agra-business. Until the growing of foood is reintroduced into communities in dense urban environments modern families will miss out on the intimate, fulfilling and time honoured activity of gardening and contributing to the food eaten at the family dinner table.

social needs

40 percent of Americans watch television during meals

A study published in the Journal of Adolescent Health found that teenagers with families who regularly ate meals together were more emotionally stable.

children learn the art of conversation and acquire the habits of civility - sharing, listening, taking turns, navigating differences, arguing without offending - and it is these habits hat are lost when we eat alone and on the run. "Civility is not needed when one is by oneself"

Significant social and political costs have resulted from fast food and convenience foods, grazing and snacking instead of sitting down for leisuely meals or watching television during mealtimes instead of conversing.

Sociologists have calculated that people have ten times as many conversations at the farmers market than they do in the supermarket. Socially as well as sensually, the farmers market offers a remarkably rich and apealing environment.

nutritional needs

Nutritional values of foods have declined with the industrialization of the food system.

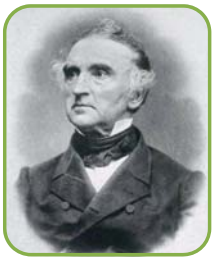
nutrient levels in 43 garden crops in 1999 vs nutrient studies conducted by USDA in 1950	**nutritional deficiencies for conventional foods relative to organic foods**
protein -6%	63% higher in calcium
calcium -16%	73% higher in iron
phosphorus -9%	118% higher in magnesium
iron -15%	91% higher in phosphorus
riboflavin -38%	125% higher in potassium
vitamin C - 2%	60% higher in zinc

ecological needs

Unsustainable farming practices contribute to the deterioration of the environment

- displacement of the natural environment
- depletion of soil and soil quality impacts
- runoff from farms contaminating waterways
- heavy use of fossil fuels

1840s



Baron Justus von Liebig, nineteenth century German chemist, broke down the previously misunderstood concept of fertility in soil into a straightforward inventory of the chemical elements plants require for growth: **nitrogen, phosphorus, and potassium**,

1890s

Community gardens aren't new. They emerge in periods when people are threatened by food insecurity. **Detroit Mayor Hazen Pingree** initiated "**potato patches**" to help Detroit citizens through the 1893 depression

1910s

During World War I the US federal government organized **War Gardens**. The idea was to increase the food supply without increasing the "use of land already cultivated, of labor already engaged in agricultural work and of time devoted to other necessary occupations."

1930s

During the 1930s **Great Depression** people turned once again to gardening as a relief strategy that provided food, income, and purpose. Gardens were started by local charities and municipalities and were followed by state and federal programs that provided staff, seeds, and guidance.

FOOD FOR THOUGHT

DRIVERS

urbanization

200 years ago 90 % of the US population lived on farms - today only 2% live on farms

The world population of 7.2 billion in mid-2013 is projected to increase by almost one billion people within the next twelve years, according to official United Nations population estimate

The world is undergoing the largest wave of urban growth in history. In 2008, for the first time in history, more than half of the world's population will be living in towns and cities. By 2030 this number will swell to almost 5 billion

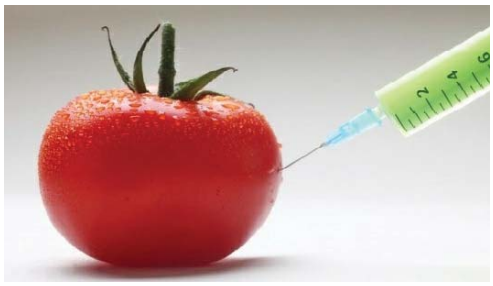
In principle, cities offer a more favourable setting for the resolution of social and environmental problems than rural areas. Cities generate jobs and income. With good governance, they can deliver education, health care and other services more efficiently than less densely settled areas simply because of their advantages of scale and proximity.

technology advancements

In 1940 one farmer could feed 19 people - today one farmer can feed the 155 people.

Biotechnology - crops are modified to withstand extreme weather conditions, weeds and pests

Major advancements contributing to increase farm production include:
Mechanization
synthetic fertilizer
pesticides
herbicides



nutrition / health awareness

Food industry studies indicate approximately one-third of American consumers are willing to pay premium prices for organic, high quality foods.

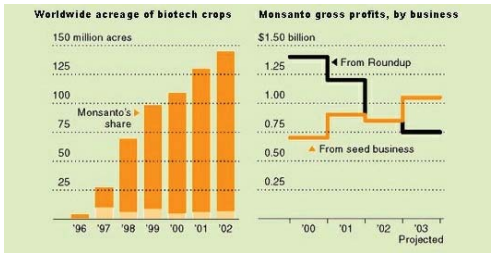
Physical health is linke ddirectly to the foods we eat. Obesity, diabetes, hypertension, heart desease and many forms of cancer have all been linked directly to diet.

capitalism / corporate profit

Food production has been taken over by large corporate entities whose underlying obligation is to make a **profit** - food production is only a means to that end.

Multinational corporations that currently control the North American food system have a legal fiduciary responsibility to maximize returns to their stockholders. There is no social or ethical commitment to protecting public health and do only those things required by law.

"the corporations will grow, deliver, and cook your food for you and (just like your mother) beg you to eat it. That they do not yet offer to insert it, prechewed, intor your mouth is only becaus they have found no profitable way to do so" - Wendel Berry



environmental degradation

The environmental impacts from unsustainable farming practices have contributed to the general public's increased awareness and support of the need for changes to the farming industry.

Phosphorus and nitrogen run-off from farms into Lake Winnepeg is feeding the blue-green algae blooms that have become so huge they can now be seen from outer space.

1940s

World War II brought the **Victory Garden** campaign to the United States, Canada, Britain and other countries. At their peak, Victory Gardens in the United States may have **accounted for as much as 40% of the vegetable production** in the country.

1950s

With the first use of **ammonium nitrate fertilizer** the ecology of the farm underwent a quiet revolution. What had been a local, sun-driven cycle of fertility, in which the legumes fed the corn which fed the livestock which in turn (with their manure) fed the corn, was now broken. Now farmer could plant corn every year.

1960s

The "**local food movement**" has its roots in the natural food movement of the 1960s, which began with the "**back to the earth**" people dropping out of the American mainstream and forming their own communities or "communes." The 1962 book, Silent Spring, had awakened public awareness to the environmental risks of agricultural pesticides.

1970s

With the end of World War II, merely preserving the fruits of nature was deemed too modest: **The goal now was to improve on nature**. The twentieth-century prestige of technology and convenience combined with advances in marketing to push aside whole foods for processed manufactured replacements.

organizations

Farm Folk City Folk - a not for profit society whose mandate is to cultivate a local, sustainable food system. Their projects provide access to & protection of food lands, support local growers and producers, and engage communities in the celebration of local food.

Community Food Centres Canada - This organization's approach strives to meet the most basic food needs of low-income families/people while combating diet-related illness, reducing social isolation, and supporting local agriculture.

The Plant - Working to show what truly sustainable food production and economic development looks like by farming inside an old meatpacking facility, incubating small craft food businesses, brewing beer and kombucha, and doing it all using only renewable energy that is made onsite.


Farm Folk City Folk


The Plant - Chicago


The Stop - The Green Barn - Toronto


Harvest Green Project - Vancouver


la-tour-vivante - Paris


Live Share Grow - San Diego

proposals

Harvest Green - Romses Architects winning entry in a competition held by the City of Vancouver to "to address climate change plans and to guide greener and denser development, reducing carbon emissions for the future."

Paris-based SOA Architects' Tour Vivante - the winning entry in a design competition for an integrated commercial and residential building proposed by the Urbanism Information Center of the city of Rennes. SOA's hypothetical scheme delivered more than 75,000 square feet of greenhouse growing area spiraling up the 30-story, 540,000-square-foot tower.

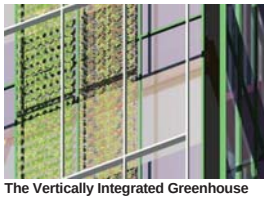
Live Share Grow - a proposal by Brandon Martella for a combo residential tower and vertical farm for downtown San Diego. The multi-story tower is dual purpose – one side holds residential apartments in varying sizes, while the other is a large-scale hydroponic vertical farm. Located in a popular area amidst other residential towers, offices, tourist attractions and very close to the bay, Live Share Grow would be sited to contribute to the larger community.

production

Vertically Integrated Greenhouse - Brooklyn-based Kiss + Cathcart has designed a vertical-growth system that integrates hydroponic food production into a multistory, double-skin facade. Plants are grown on trays suspended on cables, with planting and harvesting taking place at the bottom level.

Sky Greens Farms - one of the world's first commercial vertical farms. Sky Greens Farms founder Jack Ng is owner and designer of this potentially revolutionary translucent 4 story towers – closed loop hydraulic system. Locally grown vegetables in Singapore currently constitute only 7% of local consumption. Demand for local vegetables exceeds supply.

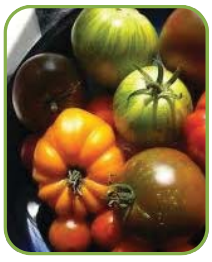
Farmed Here - this vertical farm, which occupies one-fifth of a previously vacant 90,000-square-foot warehouse near Chicago. Layers of fluorescent lamps and trays of basil and arugula are stacked five or six levels high, nearly reaching the 24-foot-tall ceiling.


The Vertically Integrated Greenhouse


Farmed Here - Chicago

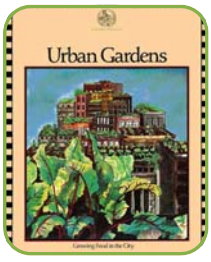

Sky Green Farms - Singapore

1980s



Slow Food movement begins with the mission: to remind a generation of industrial eaters of their connections to farmers and farms, and to the plants and animals we depend on. The movement, which began in 1989 as a protest against the opening of a McDonald's in Rome.

1990s



Vancouver Based City Farmer is launched – online educational leader, first website to publish information about urban farming. City Farmer teaches people how to grow food in the city, compost their waste and take care of their home landscape in an environmentally responsible way.

2000s

The "**Buy Fresh Buy Local**" (BFBL) movement was launched in the United States in 2003 by the FoodRoutes network (foodroutes.org). There are now 73 BFBL chapters in 40 states promoting local produce — often in partnership with businesses, such as restaurants that feature local food.

2010s

In the United States **19 percent of American meals are eaten in the car**. Except for the salads, all the food which can be ordered, paid for, and picked up without opening the car door, can be readily eaten with one hand, is waste-free, and automobile-friendly.

Agriculture may be an essential component of any plan to create sustainable urban communities. It may be the most powerful and readily accessible tool we have to close the nutrient, carbon, and pollution loops that are currently wide open and potentially devastating to our urban communities.'

Greg Watson, Boston, Massachusetts

growing food - social, nutritional, ecological

Below is a summary of research findings on six key benefit areas from participating in community gardens:
1. Nutrition Awareness
2. Environmental Awareness
3. Learning Achievements
4. Life Skills
5. Health and Wellness
6. Community Building and Social Connections

Both passive and active interactions with plants during childhood are associated with positive adult values about trees. However the strongest influence came from active gardening, such as picking flowers or planting trees as a child. (Lohr, V.I. & Pearson-Mims, C.H. (2005).

Studies have revealed important benefits of gardening on physical, emotional, social, and spiritual well-being, and highlighted a key role of gardening as a coping strategy for living with stressful life experiences.

Beneficial bacterium in soil makes us happier. There is a strain of bacterium in soil, Mycobacterium vaccae, that has been found to trigger the release of serotonin, which elevates mood and decreases anxiety. This bacterium has also been found to improve cognitive function. (Lowry C.A., et al. (2011). There has also been identification of an immune-responsive mesolimbocortical serotonergic system: potential role in regulation of emotional behavior. Neuroscience 146.2: 756–772. These findings provide the first experimental evidence that gardening can promote relief from acute stress.

local food - a rural opportunity

Environmental Benefits

Another study by the Region of Waterloo has shown that many of these "food miles" are unnecessary, since the food trade is "redundant" – that is, we are importing exactly the same foods that we are exporting17. The example provided was that of tomato imports and exports in Ontario during the growing season. Between July and September of 2005, Ontario exported $69 million in fresh tomatoes. During the same period, the province imported $17 million in fresh tomatoes.

Environmental Fuel Use and CO2 Emissions Reductions

As CO2 levels in the atmosphere increase, the potential for global climate change increases. Calculations from a Leopold Center model show that by purchasing 10 percent of 28 fruits and vegetables from local sources, 5-17 times less CO2 would be emitted than if they were purchased from the global system. Sourcing just this small portion of produce from regional or local food systems saves 280-436 thousand gallons of fuel and reduces CO2 emissions by 6.7-7.9 million pounds annually.

Social Benefits

Farmers' markets and CSAs create new spaces within communities for people to socialize. In fact, sociologists estimate people have 10 times more conversations at farmers' markets than supermarkets. Direct marketing by farmers to consumers builds relationships, creating customers who care deeply about "their" farmers and farmers who work hard to provide the very best food for "their" customers.

Decreased Packaging

Another benefit of local food is the decreased need for packaging.
According to the U.S. Food and Drug Administration, 55 percent of all packaging made in the U.S. is for food products31. In 2005, containers and packaging of all types accounted for 31.7 percent of total municipal solid waste by weight.32

Health

Local fruits and vegetables usually reach consumers more quickly and more often at the peak of freshness. So it is likely that locally produced fruits and vegetables often have higher nutritional value.

"social movements are the most important social forces that could provide a countervailing tide to global integration of the agro-food system, to the decline of household forms of agricultural commodity production, and to structural blockages to achievement of sustainability''

movements

Many people consider the food system itself to be broken:

. Farmers cannot grow food profitably.
. The quality of our food is declining within the industrialized food system.
. Farming practices are degrading the soil.
. The food industry inundates us with advertising promoting unhealthy food.
. Food-related skills have been lost with industry's emphasis on convenience.

These issues effect everyone and demonstrate that we do not have an equitable food system. The result is the emergence of social movements as people begin to understand the impacts "BIG AGRA" has on our lives, the economy and the environement

tensions in the food system

Globalization	vs.	Localization
Urban/rural divisions	vs.	Urban-rural partnership
Long trade routes	vs.	Short trade routes (food miles)
Import/export model	vs.	Food from own resources
Fast speed, pace, scale	vs.	Slow pace, speed, scale
Nonrenewable energy	vs.	Reusable energy
Few market players	vs.	Multiple players per sector
Costs externalized	vs.	Costs internalized
Rural depopulation	vs.	Vibrant rural population
Monoculture	vs.	Biodiversity
Science replacing labor	vs.	Science supporting nature
Agrochemicals	vs.	Organic/sustainable farming
Biotechnology	vs.	Indigenous knowledge
Processed (stored) food	vs.	Fresh (perishable) food
Food from factories	vs.	Food from the land
Hypermarkets	vs.	Markets
De-skilling	vs.	Skilling
Standardization	vs.	"Difference" and diversity
Niche markets on shelves	vs.	Real variety on field and plate
People to food	vs.	Food to people
Fragmented (diverse)	vs.	Common food culture
Created wants (advertising)	vs.	Real wants (learning through culture)
Burgerization	vs.	Local food specialties
Microwave reheated food	vs.	Cooked food
Fast food	vs.	Slow food
Global decisions	vs.	Local decisions
Top-down controls	vs.	Bottom-up controls
Dependency culture	vs.	Self-reliance
Social polarization and exclusion	vs.	Social inclusion
Consumers	vs.	Citizens

community food security

Corporate food production is damaging to local rural economies, drives diversified farming operations out of business, and forces farmers into contract farming that leaves them vulnerable to layoffs. In addition, contract farmers no longer determine the crop varieties they grow or the livestock they raise—corporate demand for product uniformity controls everything from the potato grown for fast food French fries (Schlosser 2001) to the broiler chickens raised for the poultry industry (Boyd and Watts 1997).

in order for a community to achieve CFS all citizens must be able to obtain food in a socially, economically, and environmentally sustainable way to maximize community self-reliance.Creating this situation involves growing food in an environmentally sustainable way and having fair liveable wages for local producers and processors so they can continue to produce food for the community. It also means that everyone in the community must have access to sufficient and nutritious foods and be able to participate in the decision-making processes regarding policies that affect CFS.

food democacy

At the core of food democracy is the idea that people can and should be actively participating in shaping the food system rather than remaining passive spectators on the sidelines. In other words, food democracy is about citizens having the power to determine agro-food policies and practices locally, regionally, nationally, and globally.

The term **food democracy** came about in 1999. Food reflects ''a titanic struggle between the forces of control, an oligarchy ruled by a handful of multinational corporations, and the pressure to democratize'' (Lang, 1999, p. 218).
Food democracy seeks to expose and challenge the antidemocratic forces of control, and claims the rights and responsibilities of citizens to participate in decision making.

The basic problem: food is viewed today first and foremost as a commodity, whose production, distribution, and consumption are determined solely by the marketplace. We propose an alternative view: to see food as a public good, one that is key to human health and an equitable society — and as such, one in which society as a whole has an interest.

other movements include:
LFS - Locally Food Systems
CSA - Community Supported Agriculture

what is community

Since the late nineteenth century, the use of the term community has remained to some extent associated with the hope and the wish of reviving the closer, warmer, more harmonious type of bonds between people vaguely attributed to past ages.

Place - Territorial or place community can be seen as where people have something in common and is understood geographically.

Interest - In interest or 'elective' communities people are linked together by factors such as religious belief, sexual orientation, occupation or ethnic origin.

Community as network and local social system - People living close to one another does not necessarily mean that they have much to do with each other. It is the nature of the relationships between people and the social networks of which they are a part that is often seen as one of the more significant aspects of 'community'.

cultivating community

Community gardens are often praised for the good things they bring to a neighborhood: more fresh food and better nutrition, reclamation of derelict land, places for families and neighbors to spend time together, and a wide range of other community, environmental and educational benefits.

Why Gardens
Gardens offer a particular combination of factors that enhance their potential to be excellent community building tools:

- A garden is a non-threatening place for interaction.
- Can be sustained primarily by the will of the community
- The process can involve a wide range of skills
- The garden is controlled by the residents themselves.
- Developing a garden empowers people.

Respond to 'non-gardening' needs
Community garden projects have address 'non-garden issues' like crime prevention, education, playgrounds and improving race relations.

In crowded urban neighborhoods, community gardens sometimes offer the only open space where family members of all ages can enjoy activities together, a peaceful haven in a noisy and overwhelming urban environment. Community gardens become the shared 'backyard' or 'village green'

Include youth
Gardens can help youth meet academic, work-related, and social challenges, and can help families provide appropriate support and direction for their teenagers.

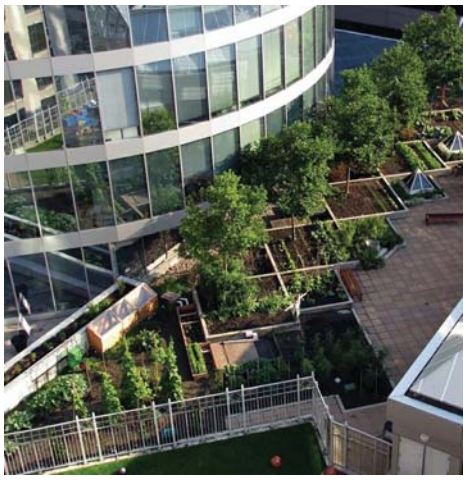
Create opportunities for children to develop a sense of place and an ethic of steward ship
Children can develop a sense of belonging and shared responsibility for caring for the garden.

community gardens

During times of economic decline and depression community gardens have been a source of food for the hungry. In our increasingly urban society, community gardens allow for a hands-on education of where and how food is produced. Growing food communally no longer carries the stigma of poverty, but now is a badge of living a sustainable, good life.

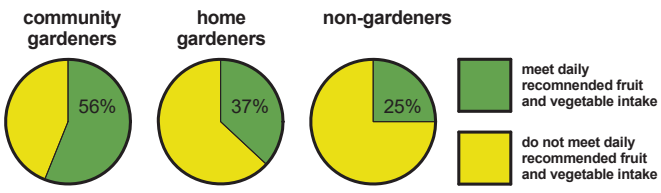
In 2000, the University of Missouri— conducted a study to observe change from 1990-2000 of social conditions. This study focused on 54 community gardens in St. Louis with the goal to examine the relationship between community gardens and their immediate neighborhood.

rents - In the immediate garden area rents increased more than in the in areas with no community garden. Rents charged in areas immediately around the gardens are significantly higher than the City as a whole.
home values - Home values and increased in the immediate areas surrounding gardens.
Household incomes - increase in household incomes was three times that of other city areas
owner occupancy - The garden areas have dramatically improved rate of owner occupancy in their immediate areas.
social investment - In areas directly surrounding the gardens there is an increase in the proportion of individuals invested in the vitality of the neighborhood and areas surrounding gardens are more stable.



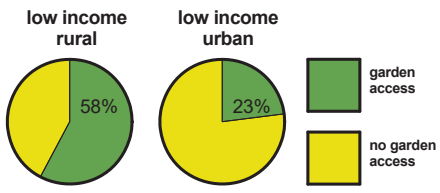
fruit and vegetable intake

neighborhood aesthetics, social involvement, and community garden participation are significantly associated with fruit and vegetable intake. Community gardeners consumed fruits and vegetables 5.7 times per day and were the only group to meet national fruit and vegetable consumption recommendations



rural vs urban garden access

rural low-income households are significantly more likely to give food to family, friends, and neighbors and obtain food such as fish, meat, and garden produce from friends and family compared to the urban low-income group.



"it provides a physical space for neighbourhood residents to meet, get to know each other, and become engaged in their community, an ideal expression of a community hub that uses food to bring people together"

The Stop's Green Barn

Green Barn, the Stop's community food hub located on the site of the historic Wychwood TTC streetcar barns at St. Clair Avenue and Christie Street. The greenhouse is a 3,000 square foot structure built to LEED Gold standards that demonstrates energy- and water-saving technologies including geothermal heating, passive solar energy and greywater recycling.

Programs

Greenhouse - greenhouse grows organic produce year-round. Under the supervision of an expert team of growers, children and adults gain hands-on experience in sustainable food production. Produce grown is used for drop-in meals and programs at the main site.

Compost Systems - large composting units and vermicomposting bins turn food waste into a growing medium for gardens. Used to teach children and visitors about biodiversity and sustainability.

Sheltered Garden & Bake Oven - Tucked inside heat-trapping brick walls but open to the sky, sheltered garden is an ideal location to demonstrate season-extension techniques for growing the diverse food plants of Toronto's multicultural communities.

Farmers' Market - Year-round market offers everything from sustainably grown vegetables and fruit to ice cream and coffee, attracting about 1,000 people every Saturday.

After School Program & Summer Camp - Offered to lower-income kids Grade 3 to 6, our free after-school program runs three days a week and provides hands-on fun in the kitchen, garden, and greenhouse, as well as art, games, and homework help. Two one-week food camps in the summer also aim to inspire engagement with food issues through cooking and gardening.

Sustainable Food Systems Education Program - Students from local schools attend a workshops focused on food issues, run through the school year, and support the Ontario curriculum.

Bake Oven & Markets - Neighbours come together at an affordable fresh food market and enjoy a free weekly pizza-baking session at our outdoor, wood-fired bake oven.

"the purpose of this project is to increase biological, social and cultural diversity in the neighbourhood and pioneer a new way of living together in the city"

Prinzessinnengarten

The Prinzessinnengarten (Princesses' Garden) is a participatory community urban agriculture experiment in Berlin-Kreuzberg. Begun in the summer of 2009 with the support and participation of neighbours and gardening enthusiasts, the project is a radical transformation of a corner of the city's Moritzplatz that has remained unbuilt since World War II. It promotes a culture of "passionate amateurism" and DIY in a space that has become a forum for the exchange of ideas and co-operation.

Prinzessinnengärten is a new urban place of learning. It is where locals can come together to experiment and discover more about organic food production, biodiversity and climate protection. There are approximately 2700 stackable containers, 400 rice bags and 250 Tetra-Paks in use in various combinations, producing as much as 4000 kg of produce in one year.

Part of the produce is offered to visitors to harvest themselves, while another part is used by an onsite café and restaurant, which help finance the project while strengthening its role as gathering point. The project is operated by the nonprofit organization Nomadisch Grün

built

paved

green

community garden

FOOD FOR THOUGHT

TERM 2
PROGRAM & DESIGN DEVELOPMENT

TERM 2 - Intent Concept Process Resolution

My efforts during the second term of my thesis project focussed on program and design development. The first goal for this term was to create a program which would be based on the conclusions drawn from my research during semester one. The development of this program provided the spatial and functional needs for the many varied components of the project. This information was critically required to inform the final site selection. The second goal for this term was to explore the alternative sites and functional relationships of the program elements through the use of conceptual diagrams and massing to begin to explore the building form.

Research conclusions from my first semester included the following: 1) there is a disconnection with what we eat, 2) very little urban space is designated for gardening, 3) existing community centres do not have gardening related programming, 4) gardening increases health/wellbeing, 5) gardens can have significant food production, 6) food related skills have generally diminished, 7) food is viewed as a commodity, 8) gardens cultivate community and 9) media does not promote gardening. These 9 points were closely considered as I developed the program with the end goal for the project being to create a facility where the public can interact, familiarize themselves and participate in the production of food in a dense urban environment. The purpose of this is to provide a missing social link for urban communities and help reconnect urban dwellers with the time-honoured tradition and the satisfaction of growing one's own food.

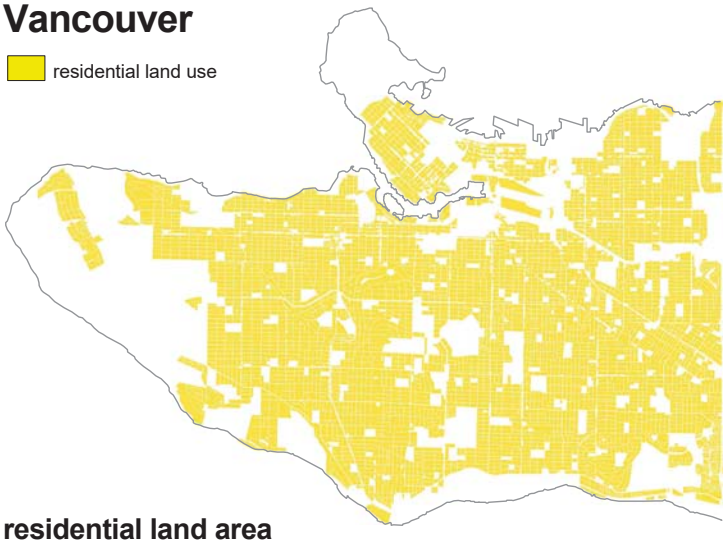
The process of site selection was the second focus of Term 2. Based on research conclusions from Term 1 I selected 12 potential sites for review, each of which had to meet the following criteria: 1) be located in a densely populated urban setting, 2) central to it's neighborhood, 3) receive significant direct sunlight, 4) be accessible to the public, 5) must not duplicate existing local services, 6) sized to accommodate program, 7) be well served by public transit and 8) have limited public community services in the immediate area. Each of the twelve sites is presented graphically and in context with a list of pros and cons identifying critical relevant observations. From this analysis, a final site was selected. This site then went through a further rigorous review which identified adjacent building use and scale of adjacent buildings, influential components of the immediate neighborhood, traffic patterns related to automobile, public transit, designated bicycle paths and a shadow analysis of the impact of adjacent buildings on the site.

After the final site selection and analysis was complete I returned to the previously developed program and worked on space flow and adjacencies of program components. This analysis related to the public, semi public, semi private and private nature of each space and their appropriate adjacencies. These adjacencies were reviewed in plan and as they could relate vertically and shown in the form of stacked program diagrams which indicate the beginning of building form.

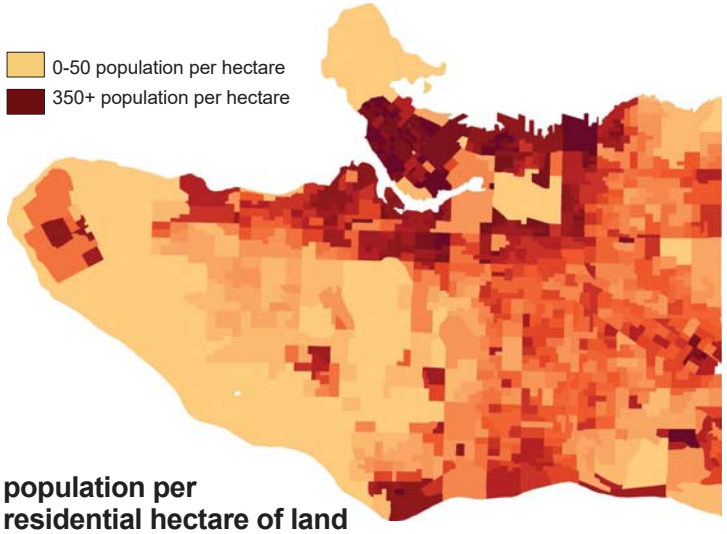
The last task undertaken during this semester was an exploration of various building massing diagrams on the site. These massing were scaled and sized to reflect the general size of the functions program and were able to give a general idea of the size of the building as an object on the site.

FOOD FOR THOUGHT CRITERIA

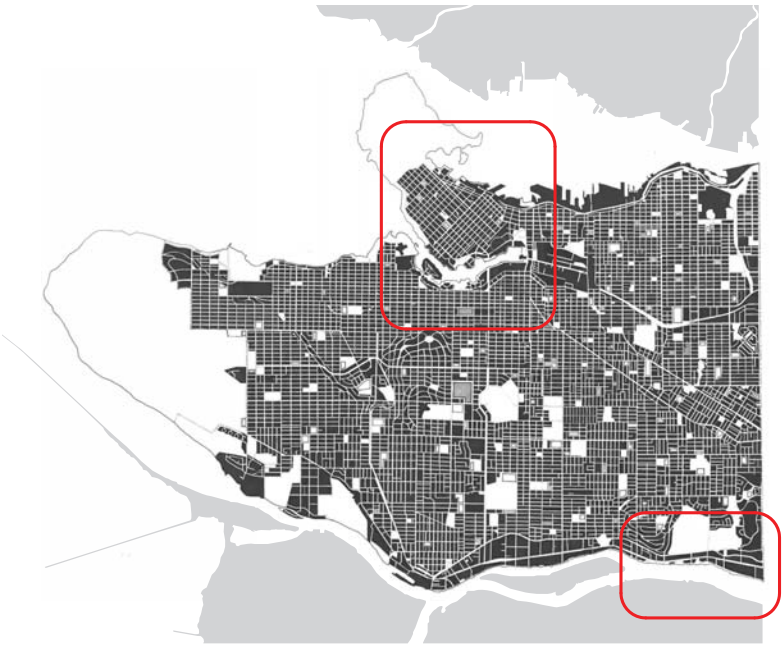
Vancouver



residential land area



population per residential hectare of land



site location selection

thesis statement:

The industrial farming practices of "BIG AGRA" are at odds with urban society's social, nutritional and ecological needs.

research conclusions

1. Disconnection - what is it we eat?
2. Urban space is not designated for gardening.
3. Existing community centres do not have gardening related programming.
4. Gardening increases health/wellbeing.
5. Gardens can have significant food production.
6. Food related skills diminished.
7. Food is viewed as a commodity.
8. Gardens cultivate community.
9. Media does not promote gardening.

site selection criteria

1. Densely populated urban setting.
2. Central to neighborhood.
3. Receives significant direct sunlight.
4. Accessible to the public.
5. Does not duplicate existing services.
6. Sized to accomodate progam.
7. Well served by public transit.
8. Limited existing services in area.

sites - False Creek, West End

sites - River District

SITES 1-6

FOOD FOR THOUGHT

pros
- accessible by transit (bus)
- large site

cons
- located at the edge of industrial lands
- removed from residential area
- some shading by Burrard Bridge

1 Fir Street extended to east edge of Burrard Bridge

pros
- accessible by transit (bus)
- adequate site for proposed program
- adjacent to high density residential neighborhood

cons
- site is bisected by railway line (innactive)
- located at the edge of industrial and commercial zoned areas

2 north east corner of West 2nd and Fir Street

pros
- accessible by transit (skytrain and bus)
- adequate site for proposed program
- adjacent to high density residential neighborhood
- sufficiant access to direct sunlight

cons
- currently parking lot which would have to be incorporated into new projet
- adjacent to industrial/commerecially zone area

3 parking lot at Olympic Village sky train station

pros
- accessible by transit (skytrain and bus)
- adequate site for proposed program
- adjacent to high density residential neighborhood
- currently unused industrial lands
- faces seawall - acessible by
- Cambie Bridge provides useable covered area for all seasons outdoor activities

cons
- bridge casts a significant shadow over site during later part of the day

4 waters edge under Cambie Bridge including area to immediate east

pros
- accessible by transit (skytrain and bus)
- adequate site for proposed program
- adjacent to high density residential neighborhood
- currently unused industrial lands

cons
- close to industrial commercial area potentially limiting users

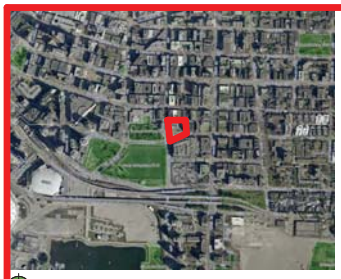
5 west of Olympic Village

pros
- accessible by transit (skytrain and bus)
- adequate site for proposed program
- adjacent to high density residential neighborhood
- currently unused industrial lands
- faces seawall - acessible by foot traffic, cyclists

cons
- water edge limits proximity to residential
- future hi-rise development to south expected to cast shadows

6 east of Olympic Village

FOOD FOR THOUGHT SITES 7-12



pros
- accessible by transit (skytrain and bus)
- adequate site for proposed program
- central to high density residential neighborhood
- ample access to direct sunlight
- central to existing neighborhoods
- close to central business district
- adjacent to small plaza - potential use

cons
- zero lot line adjacency to east
- site size on small side for proposed program

7 across from Sun Yat-sen Gardens

pros
- accessible by transit (skytrain and bus)
- adequate site for proposed program
- ample access to direct sunlight
- close to central business district
- adjacent to Seawall - pedestrian and cyclist access

cons
- separated from significant residential by viaducts and Skytrain track
- adjacent properties undeveloped

8 north side of False Creek

pros
- accessible by transit (bus)
- ample access to direct sunlight
- close to central business district
- pedestrian and cyclist access

cons
- site located in a commercial zone with heavy vehicle traffic

9 north west corner of Davie and Burrard Streets

pros
- acessible by transit (bus)
- adequate site for proposed program
- ample access to direct sunlight
- adjacent to Seawall - pedestrian and cyclist access

cons
- separated from significant residential Georgia Street
- Site faces waterfront and park on 2 sides limiting proximity to residetial areas

10 west edge of Coal Harbour - east side of Devonian Park

pros
- adequate site for proposed program
- ample access to direct sunlight
- adjacent to waters edge - pedestrian and cyclist access

cons
- limited transit access (bus on SE Marine Dr.)
- limited residential adjacencies

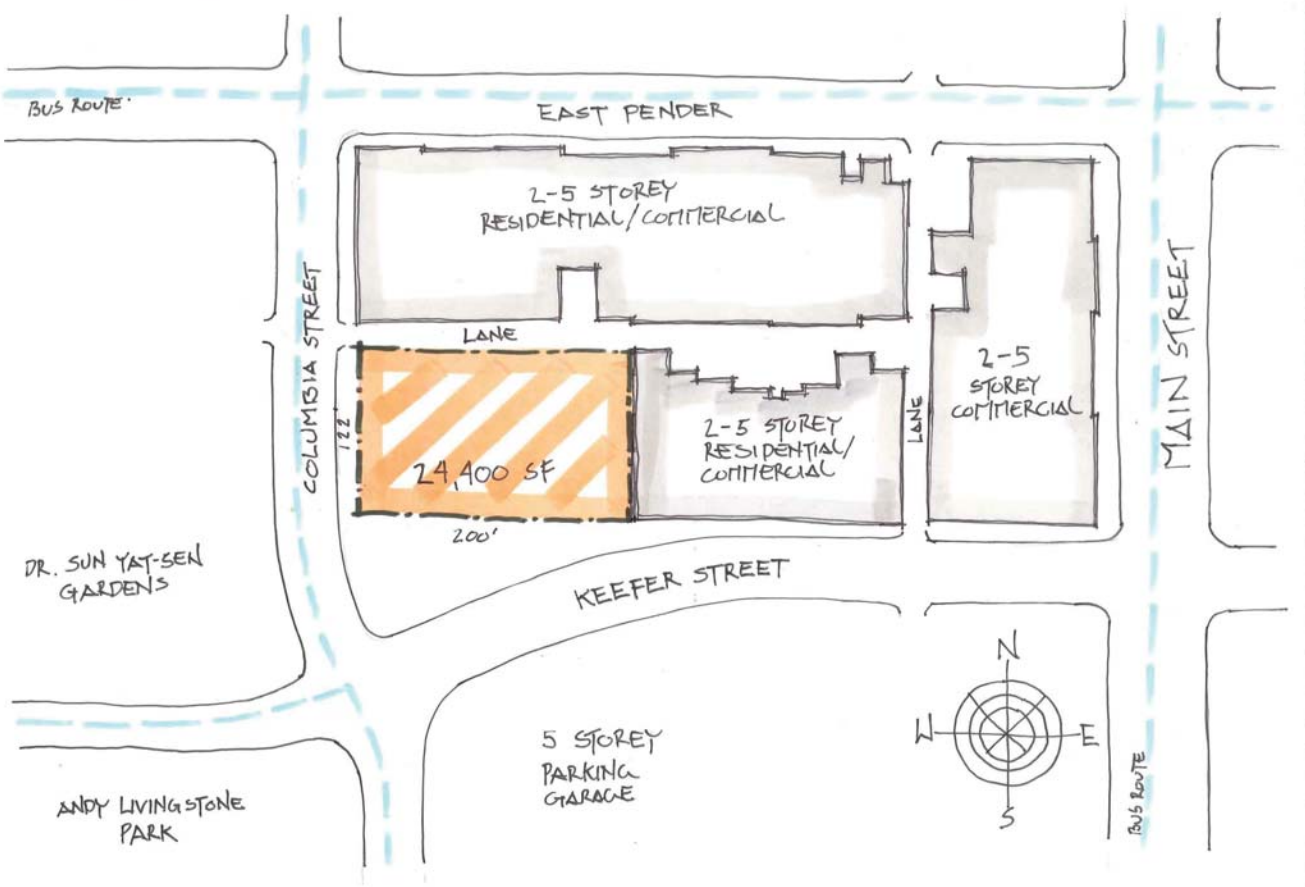
11 East Fraser Lands - west of Kerr Street

pros
- adequate site for proposed program
- ample access to direct sunlight
- adjacent to waters edge - pedestrian and cyclist access
- City of Vancouver currently has master plan for area c/w

cons
- limited transit access (bus on SE Marine Dr.)
- limited residential adjacencies until multiple development complete

12 East Fraser Lands - east of Kerr Street

FOOD FOR THOUGHT SELECTION



FOOD FOR THOUGHT PROGRAM

spatial zoning type

public | semi-public | semi-private | private

growing areas - 10,000 sf

apiary - 200 sf

composting - 300 sf

market area / event space - 8,000 sf

cafe / restaurant - 1,000 sf

kitchen / preparation centre - 1,000 sf

kitchen / outdoor cook oven - 200 sf

flexible exterior gathering space - 1,000 sf

classrooms (two) -1,200 sf

central hall - 1,500 sf

presentation theatre - 2,000 sf

library - 300 sf

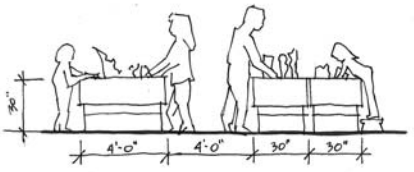
meeting rooms - 350 sf

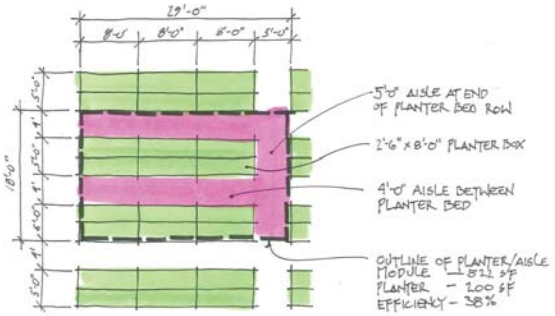
administrative offices - 500 sf

back-of-house - 200 sf

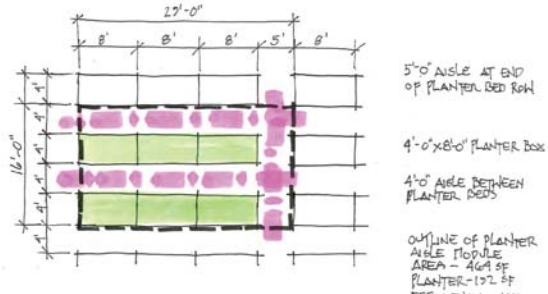
public washrooms- 300 sf

parking and loading - 200 sf

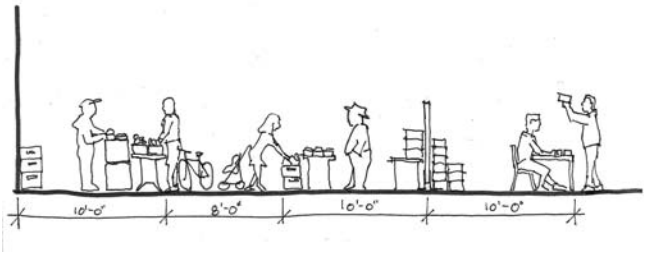


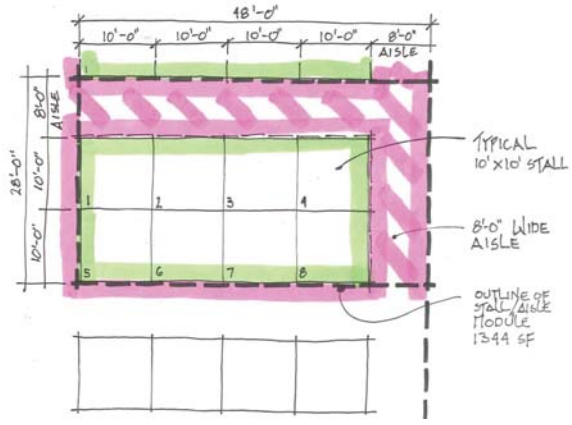


planter layout 1

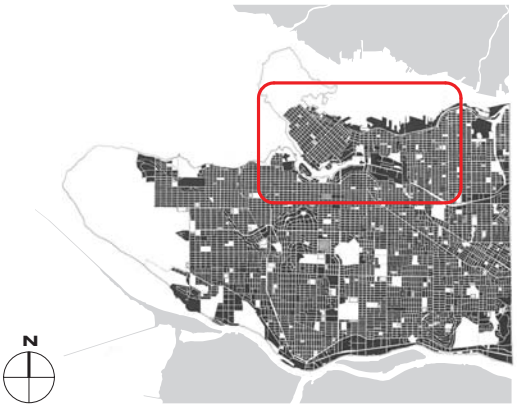


planter layout 2

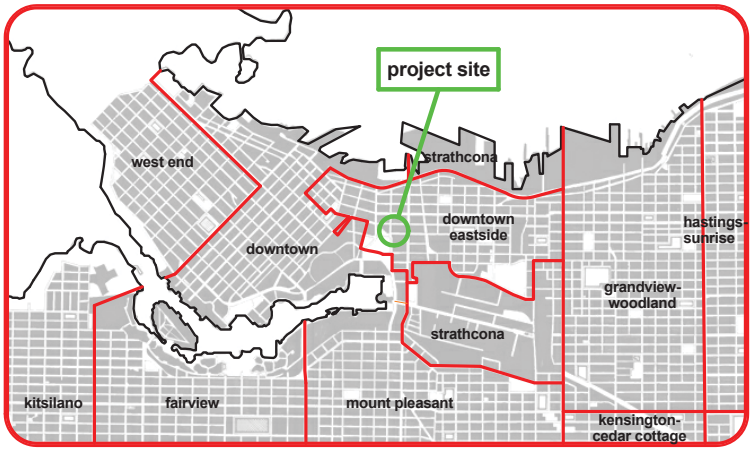




market stalls



city of vancouver 1:90000



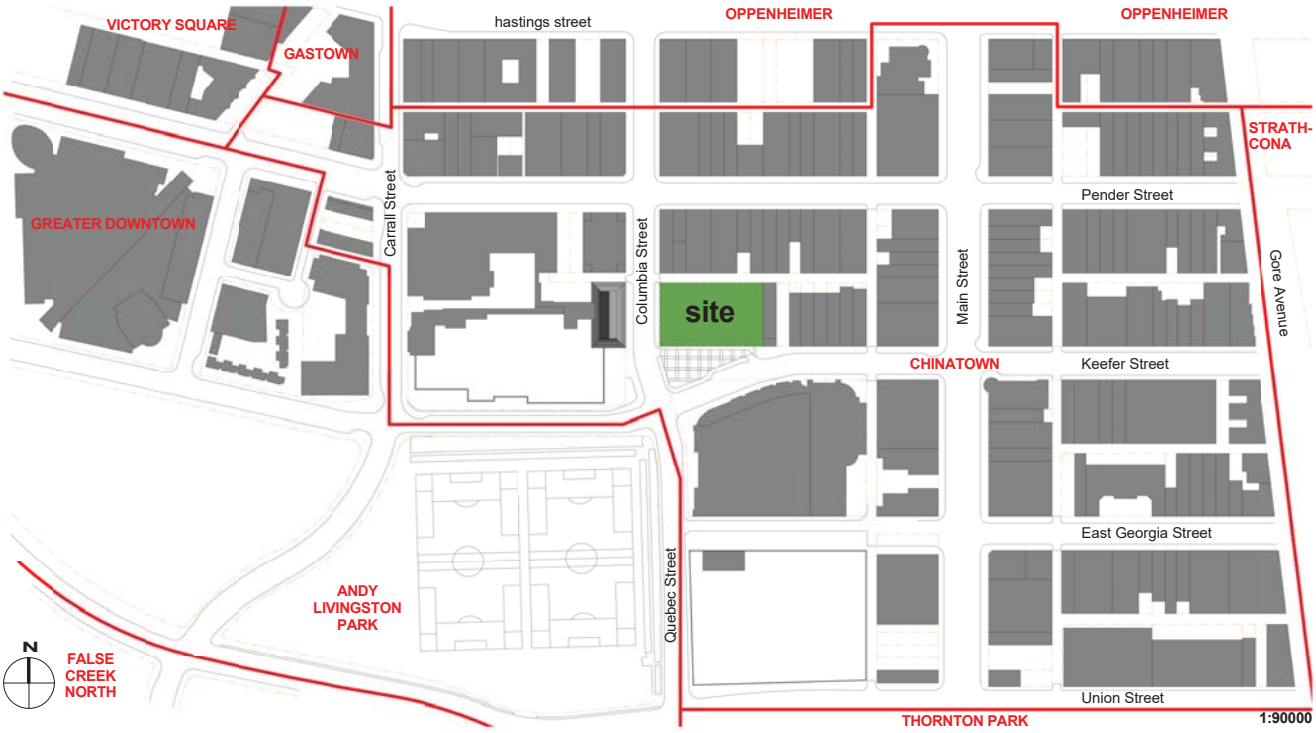
vicinity 1:24000

commercial

cultural

public

heritage



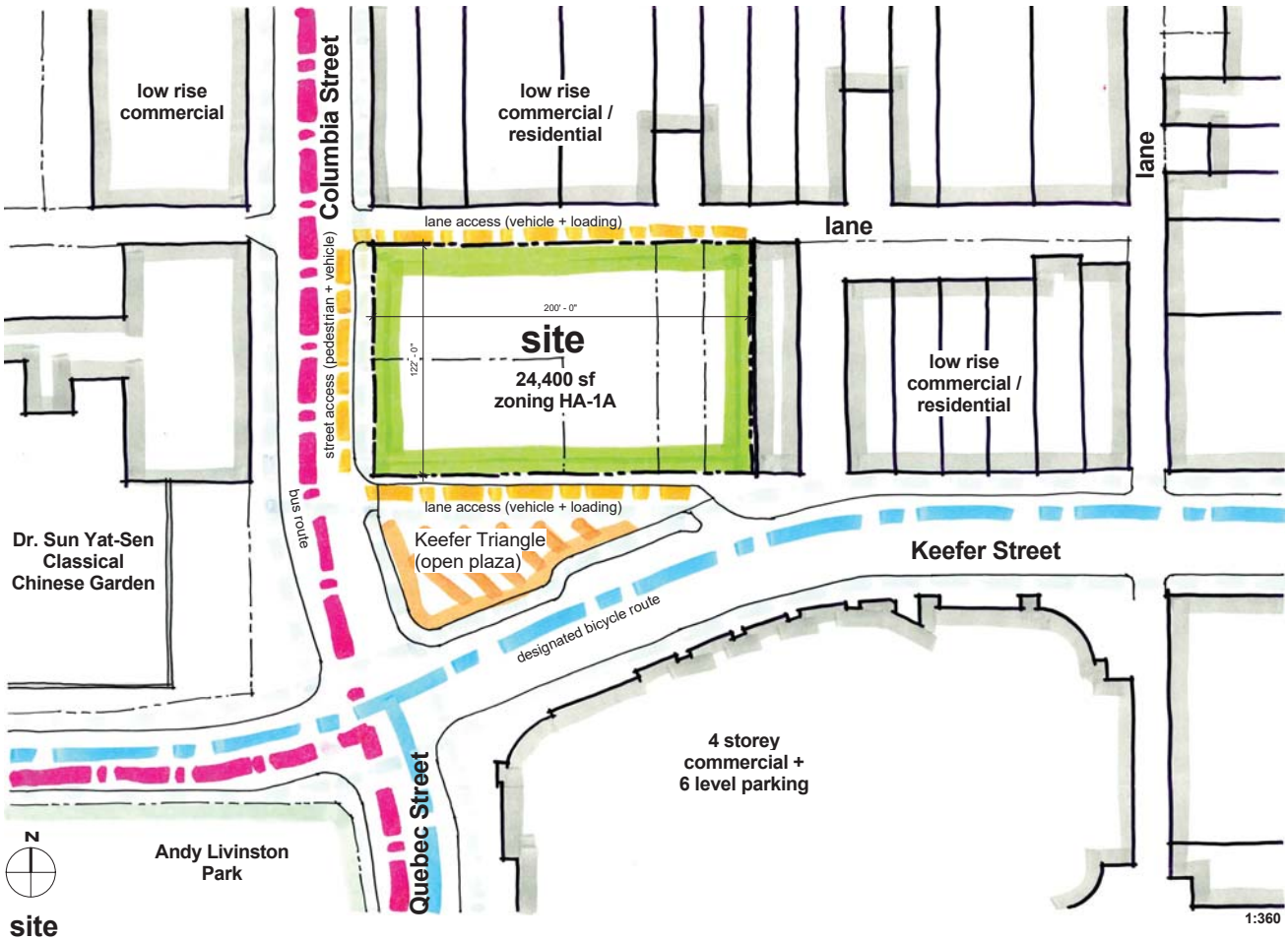
neighborhood 1:90000

residential - tower

recreation - athletics

gentrification

cultural retail



site

west

north

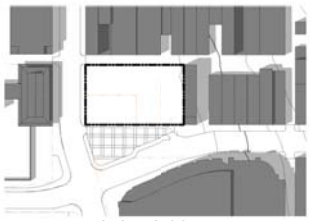
east

south

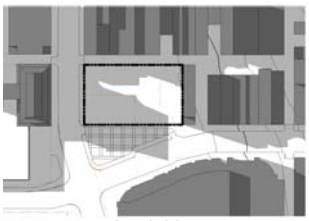
adjacencies

summer solstice 8:00am

summer solstice 12:00pm



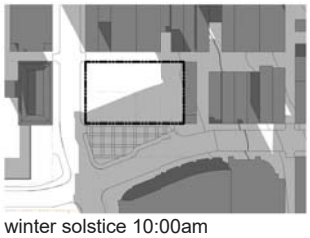
summer solstice 2:00pm



summer sostice 6:00pm

spring equinox 8:00am

spring equinox 5:00pm



winter solstice 10:00am

spring equinox 8:00am

shadow analysis

public

- growing areas
- market / event space
- entry / central hall
- cafe
- public washrooms
- loading / recycling / garbage
- composting

semi public

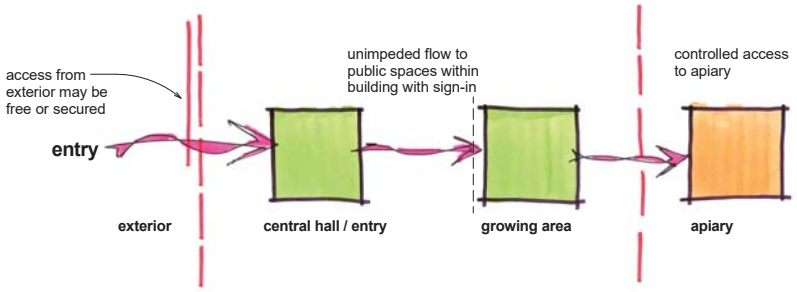
- kitchen / outdoor cook oven
- flexible exterior gathering area
- presentation theatre
- parking (below grade)

semi private

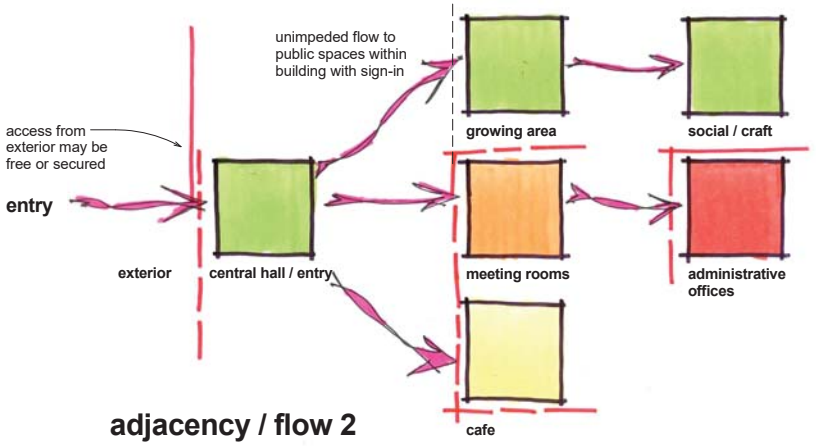
- apiary
- kitchen / preparation centre
- classrooms
- library
- meeting rooms

private

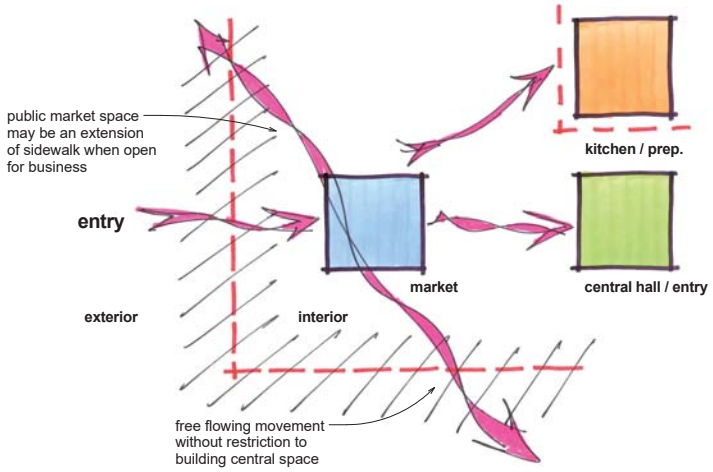
- administrative offices
- back-of-house
- service rooms/spaces



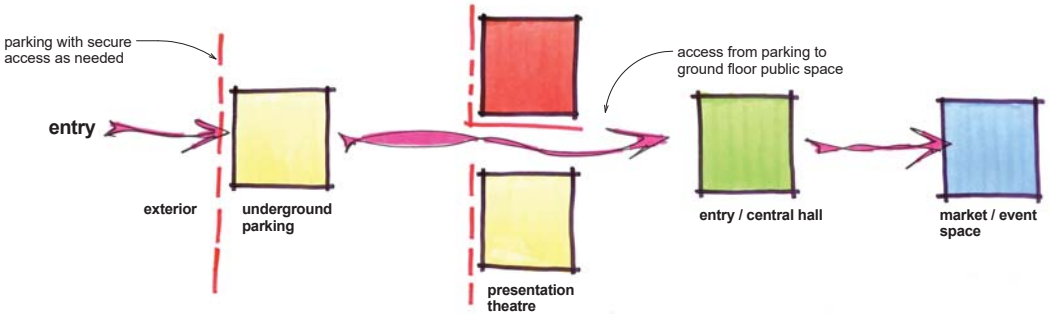
adjacency / flow 1



adjacency / flow 2

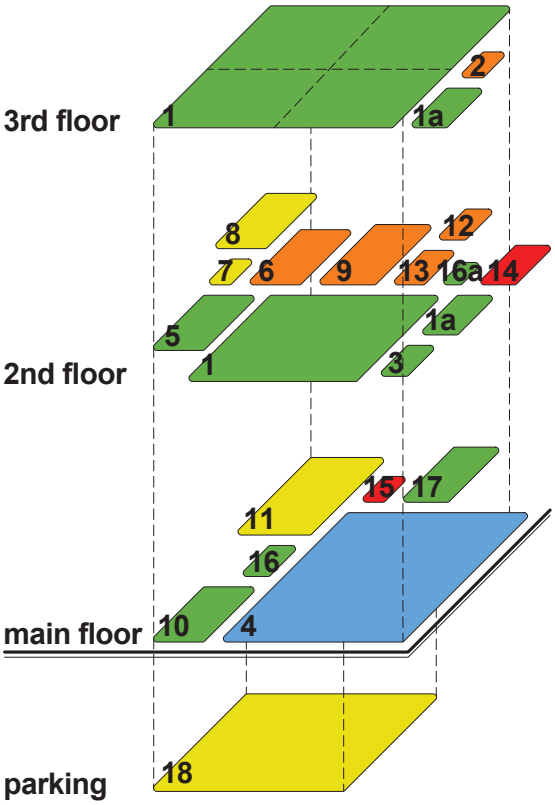


adjacency / flow 3

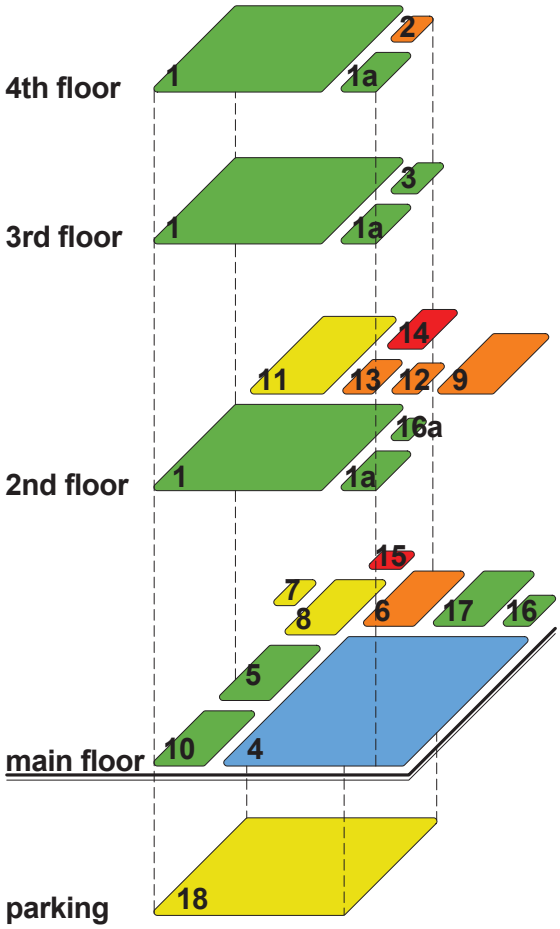


adjacency / flow 4

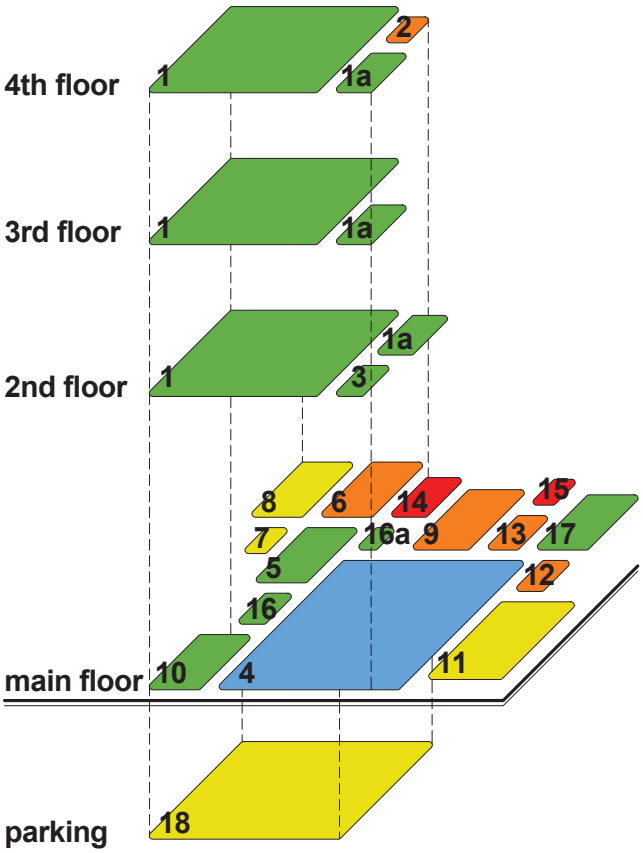
programming - option 1



programming - option 2



programming - option 3



spatial zoning type

public

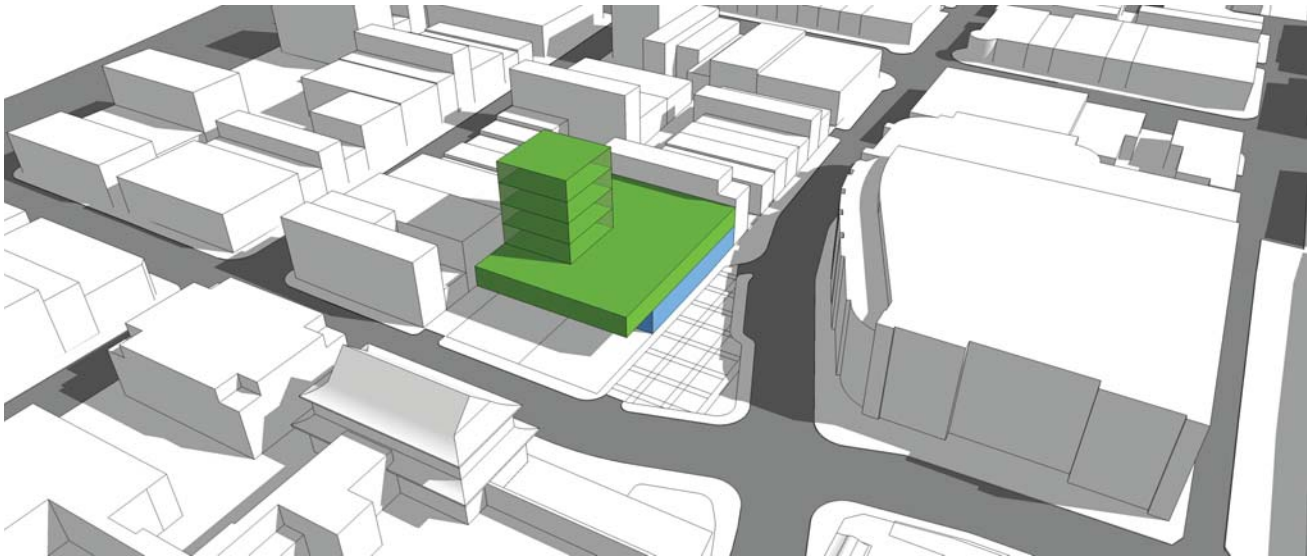
semi-public

semi-private

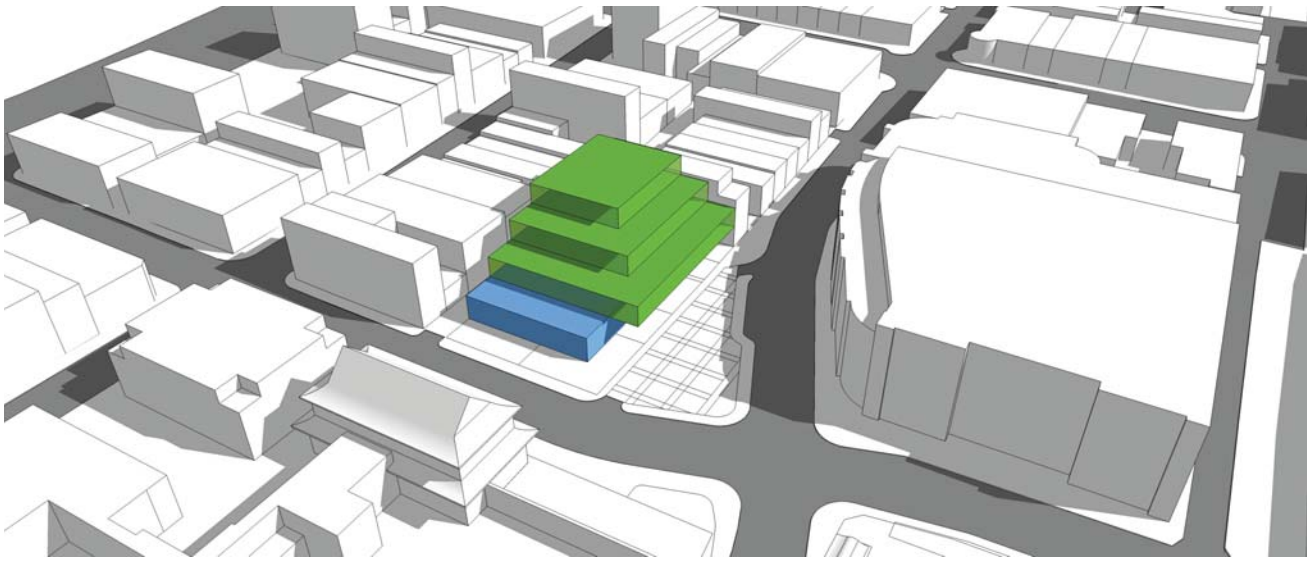
private

1		growing areas - 10,000 sf
1a		social adj. to growing - 500 sf
2		apiary - 200 sf
3		composting - 300 sf
4		market area / event space - 8,000 sf
5		cafe / restaurant - 1,000 sf
6		kitchen / preparation centre - 1,000 sf
7		kitchen / outdoor cook oven - 200 sf
8		flexible exterior gathering space - 1,000 sf
9		classrooms (two) -1,200 sf
10		central hall / entry - 1,500 sf
11		presentation theatre - 2,000 sf
12		library - 300 sf
13		meeting rooms - 350 sf
14		administrative offices - 500 sf
15		back-of-house - 200 sf
16		public washrooms- 300 sf
16a		public washrooms- 150 sf
17		loading, recycling, garbage - 1000 sf
18		parking - below grade - 6,000 sf

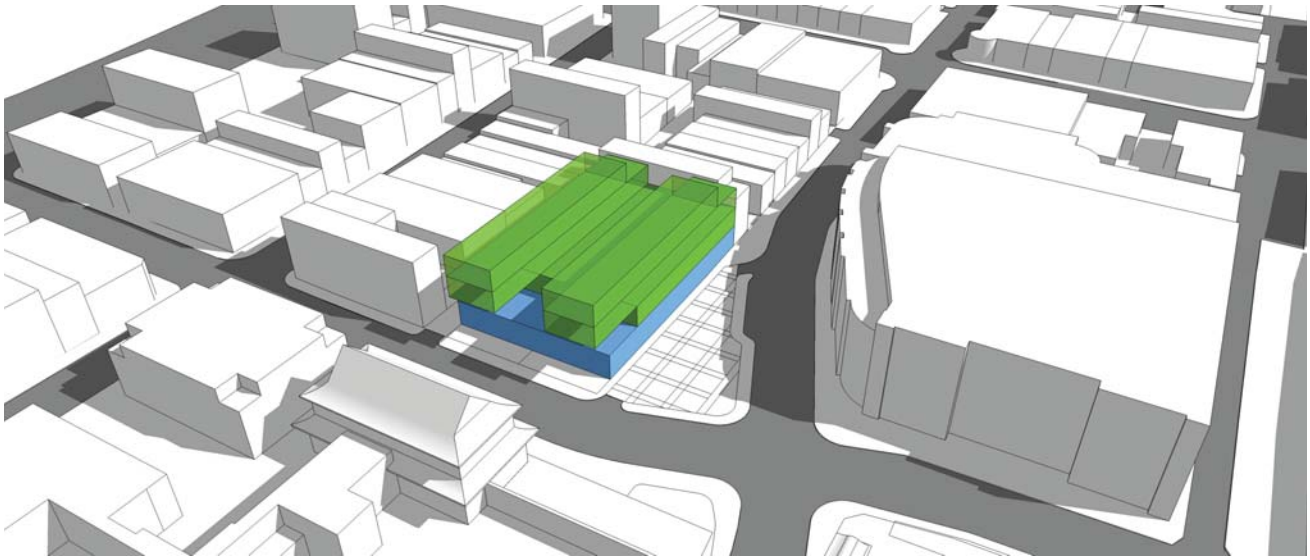
MASSING EXPLORATION



massing option 1



massing option 2



massing option 3

FOOD FOR THOUGHT

TERM 3
SCHEMATIC DESIGN

TERM 3 - Intent Concept Process Resolution

The third term of my thesis project was dedicated to schematic design with the end goal being to design a building that addressed the needs initially outlined in my thesis statement which was, “the industrial farming practices of Big Agra are at odds with urban society’s social, nutritional and ecological needs”. The previous two semesters were dedicated to research and followed by site selection and the development of a program. At the beginning of this third semester, with the site chosen, site analysis complete and the program developed, the more formal design process began.

The first steps included investigation of program scale on the site and the development of schematic layouts. At this point, a context site model of the neighborhood was also constructed along with several styrofoam massing models. The massing models were based off of schematic sketched layouts. This brought the project to midterm where the programming data, site and massing models, and schematic layouts were presented. Following the midterm presentation I revisited my approach to placement of the building on the site with a new focus on the requirement for access to sunlight for outdoor garden areas and for pedestrian flow in and around the building, especially including access from street level to public market component and main building entrance. Given that the building had evolved into a neighborhood gardening and community center where people living in a high a density urban environment could have the opportunity to learn about, garden and grow their own food in a community building, access to sunlight and accessibility and circulation were critical to the success of the design.

Three new site options were explored at this point and the preferred option was selected. This option placed the building centrally within the site while also rotating it in plan to maximize the potential for daylight access to the southern exposure. In addition, this orientation and placement on the site created a distinct main entry and open plaza as well as working with the existing pedestrian routing through the site for the open public market. The next steps included further development of the floor plans and the construction of plate models to the same scale as the site context model. This allowed for a thorough investigation of sunlight access and was critical in influencing the shape of the floor plates. Moving forward at the same time, the floor plans were further developed to include all the program elements with the focus on ensuring circulation and access to the entire building was achieved. The final project was modeled using BIM software and the project was presented on six presentation boards which included sketched work and photos showing the project progress as well as floor plans, section, elevation, and coloured renderings of the building.

The industrial farming practices of "BIG AGRA" are at odds with urban society's social, nutritional and ecological needs.

Creating a facility where the public can interact, familiarise themselves and participate in the production of food in a dense urban environment will provide a missing social link for urban communities and help reconnect urban dwellers with the time honoured tradition and the satisfaction of growing one's own food.

It is my belief that food in all its various forms help define and bind communities together and that this connection has been diminished as a result of the increased size and density of cities and the profit driven actions of large scale agra-business. Until the growing of foood is reintroduced into communities in dense urban environments modern families will miss out on the intimate, fulfilling and time honoured activity of gardening and contributing to the food eaten at the family dinner table.

research conclusions

Conclusions – general conclusions drawn from Term 1 research are as follows:

1. There is a disconnection between the food we eat and how and where it is produced and what exactly it is.

2. There is not enough dedicated space in high density urban settings available to public gardening and food production.

3. Existing community centres programming focus on community, health, learning and fitness but little time and space is dedicated to gardening and food

- As an example in the City of Vancouver if you were to go to a community centre and wanted to learn about gardening you could take a class but there is no opportunity to use the community centre as a centre for growing food and especially not in a personal space.

4. Health and wellbeing are significantly increased from gardening. Studies have revealed important benefits of gardening on physical, emotional, social, and spiritual well-being and highlighted a key role of gardening as a coping strategy for living with stressful life experiences.

5. Personal garden space can produce a significant amount of fruit and vegetable production – at the height of the victory garden campaign during WW2 as much as 40% of the vegetable production in the United States was from gardening.

6. Food related skill have been diminished with industry's emphasis on convenience.

7. Food is viewed today first and foremost as a commodity, whose production, distribution and consumption are determined solely by the marketplace.

8. Gardens cultivate community as they offer a place to learn and share skills and involve people of all ages.

THESIS - FOOD FOR THOUGHT - facility size

SPACE PROGRAM

	COMPONENTS	PUBLIC vs PRIVATE	ADJACENCIES	AREA S.F.	COMMENTS
1	GROWING AREA - INDOOR/OUTDOOR (greenhouse)	semi public	greenhouse, storage, wahsrooms	10000	abundant access to natural light
1A	GROWING AREA - SOCIAL, ADJACENT SPACE		Growing Area	500	
2	APIARY	semi private	Growing Area	200	exterior space
3	COMPOSTING	semi private	Growing Area, Parking and Loading	300	
4	MARKET AREA / EVENT SPACE	public	street/public sidewal	8000	interior exterior space - movable walls/panel doors
5	CAFÉ / RESTAURANT	semi public	street/public sidewalk, market area	1000	ground level
6	KITCHEN - PREPARATION CENTER	semi private	Administrative Offices, classroom space	1000	access to centre users
7	KITCHEN - OUTDOOR COOK OVEN	semi public		200	
8	FLEXIBLE EXTERIOR GATHERING SPACE	semi public	outdoor cook oven, market area / event space	1000	covered
9	CLASSROOM (two rooms)	semi private	central hall	1200	
10	CENTRAL HALL	public	entry	1500	focal point of interior circulation
11	PRESENTATION THEATRE	semi public	Entry, Central Hall	2000	
12	LIBRARY	semi private	Central hall, Administrative Offices	300	
13	MEETING ROOMS (two)	semi private	Adminstrative Offices, Central Hall	350	
14	ADMINISTRATIVE OFFICES	private	Central Hall, Kitchen, Growing Areas	500	
15	BACK OF HOUSE - STORAGE AND UTILITY	private	Administrative Offices, classroom space	200	
16	PUBLIC WASHROOMS	semi public	Central Hall, Market Area / Event Space	300	
16A	PUBLIC WASHROOMS	semi public	growing areas	200	
17	LOADING, RECYCLING, GARBAGE	pubic	Market Area / Event Space, Growing Areas	1500	street or lane access required
18	BICYCLE LOCK-UP AREA	public		200	for public use
19	BICYCLE LOCKER AND SHOWER AREA - STAFF	private		1000	centre staff use
	Sub Total			31,450	
	SERVICE SPACES				
29	GENERAL CIRCULATION (add 20% area)			6290.00	
30	ELECTRICAL AND MECHANICAL ROOMS			200.00	
	Sub Total			6,490.00	
	TOTAL NEIGHBORHOOD FOOD CENTRE SF			37,940.00	

THESIS - FOOD FOR THOUGHT - programming

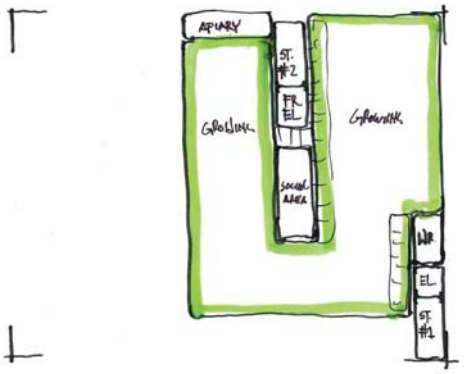
PROGRAMMING OPTIONS

	PROGRAMMING OPTION 1	
No.	MAIN FLOOR	AREA (S.F.)
4	MARKET AREA / EVENT SPACE	8000
10	CENTRAL HALL / ENTRY	1500
11	PRESENTATION THEATRE	2000
15	BACK-OF-HOUSE	200
16	PUBLIC WASHROOMS	300
17	LOADING, RECYCLING, GARBAGE	1500
	SUB TOTAL	13500
	2ND FLOOR	
1	GROWING AREA	5,000
1a	SOCIAL AREA - ADJACENT TO GROWING AREA	200
3	COMPOSTING	300
5	CAFÉ / RESTAURANT	1000
6	KITCHEN / PREPARATION CENTRE	1000
7	KITCHEN OUTDOOR COOK AREA	200
8	FLEXIBLE EXTERIOR GATHERING SPACE	1000
9	CLASSROOM (2)	1200
12	LIBRARY	300
13	MEETING ROOMS (2)	350
14	ADMINISTRATIVE OFFICES	500
16a	PUBLIC WASHROOMS	200
	SUB TOTAL	11,250
	3RD FLOOR	
1	GROWING AREAS - COMBINED	10,000
1a	GROWING AREA SOCIAL - COMBINED	300
2	APIARY	200
	SUB TOTAL	10,500
	TOTAL	35,250

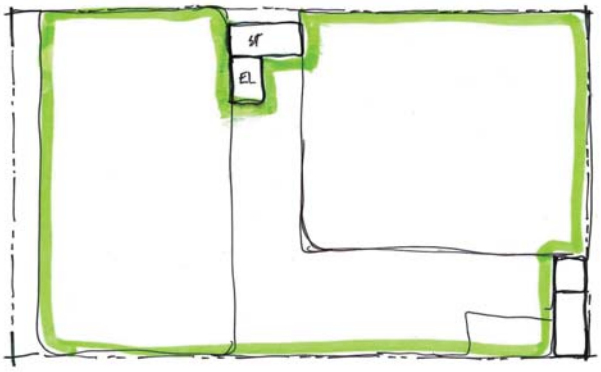
	PROGRAMMING OPTION 2	
No.	MAIN FLOOR	AREA (S.F.)
4	MARKET AREA / EVENT SPACE	8000
5	CAFÉ / RESTAURANT	1000
6	KITCHEN / PREPARATION CENTRE	1000
7	KITCHEN OUTDOOR COOK AREA	200
8	FLEXIBLE EXTERIOR GATHERING SPACE	1000
10	CENTRAL HALL / ENTRY	1500
15	BACK-OF-HOUSE	200
16	PUBLIC WASHROOMS	300
17	LOADING, RECYCLING, GARBAGE	1500
	SUB TOTAL	14,700
	2ND FLOOR	
1	GROWING AREA	5,000
1a	SOCIAL AREA - ADJACENT TO GROWING AREA	200
9	CLASSROOMS (2)	1200
11	PRESENTATION THEATRE	2000
12	LIBRARY	300
13	MEETING ROOMS (2)	350
14	ADMINISTRATIVE OFFICES	500
16a	PUBLIC WASHROOMS	200
	SUB TOTAL	9,750
	3RD FLOOR	
1	GROWING AREA	5,000
1a	SOCIAL AREA - ADJACENT TO GROWING AREA	150
3	COMPOSTING	300
	SUB TOTAL	5,450
	4TH FLOOR	
1	GROWING AREA	5,000
1a	SOCIAL AREA - ADJACENT TO GROWING AREA	150
2	APIARY	200
	SUB TOTAL	5,350
	TOTAL	35,250

	PROGRAMMING OPTION 3	
No.	MAIN FLOOR	AREA (S.F.)
4	MARKET AREA / EVENT SPACE	8,000
5	CAFÉ / RESTAURANT	1,000
6	KITCHEN / PREPARATION CENTRE	1,000
7	KITCHEN OUTDOOR COOK AREA	200
8	FLEXIBLE EXTERIOR GATHERING SPACE	1,000
9	CLASSROOMS (2)	1,200
10	CENTRAL HALL / ENTRY	1,500
11	PRESENTATION THEATRE	2,000
12	LIBRARY	300
13	MEETING ROOMS (2)	350
15	ADMINISTRATIVE OFFICES	500
16	PUBLIC WASHROOMS	300
16a	PUBLIC WASHROOMS	200
17	LOADING, RECYCLING, GARBAGE	1,500
	SUB TOTAL	19,050
	2ND FLOOR	
1	GROWING AREA	5,000
1a	SOCIAL AREA - ADJACENT TO GROWING AREA	200
3	COMPOSTING	300
	SUB TOTAL	5,500
	3RD FLOOR	
1	GROWING AREA	5,000
1a	SOCIAL AREA - ADJACENT TO GROWING AREA	150
	SUB TOTAL	5,150
	4TH FLOOR	
1	GROWING AREAS - COMBINED	5,000
1a	SOCIAL AREA - ADJACENT TO GROWING AREA	150
2	APIARY	200
	SUB TOTAL	5,350
	TOTAL	35,050

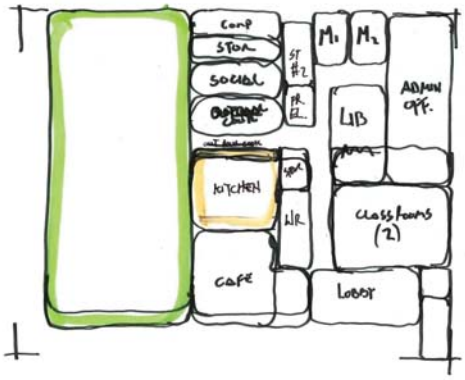
FOOD FOR THOUGHT



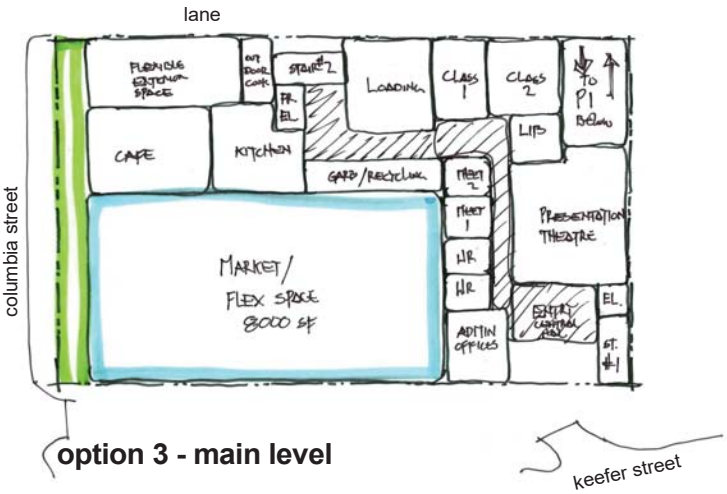
option 1 - 3rd level



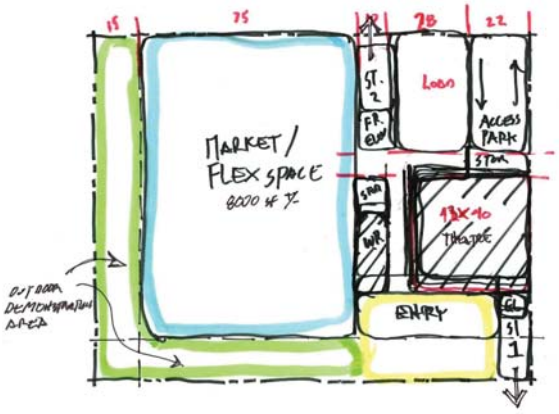
option 3 - 2nd level



option 1 - 2nd level



option 3 - main level



option 1 - main level

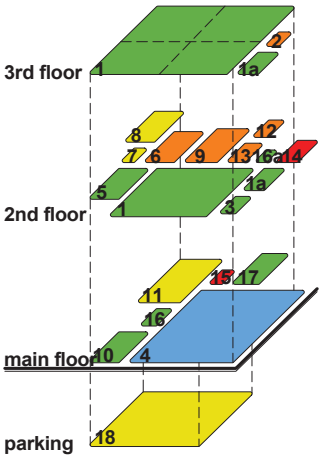
3rd level - opt. 1
- outdoor grow area with direct sunlight from south and west
- location of most program elements ensures services are provided directly to building users

2nd level - opt. 1
- outdoor grow area with direct sunlight from south and west
- location of most program elements ensures services are provided directly to building users

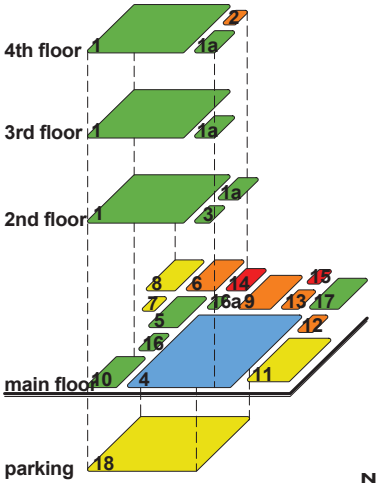
main level - opt. 1
- market set back from property edge to accommodate ground level gardens
- market opens to street for direct unrestricted pedestrian access
- main building entry to the south facing keefer street provides direct access to theatre and provides potential separation from remainder of building

2nd level - opt. 3
- uninterrupted single level growing area
- direct sunlight from south and west
- growing area served by two stairs, elevator and freight elevator

main level - opt. 3
- market set back from property edge at west to accommodate ground level gardens
- market opens to street for direct unrestricted pedestrian access
- main building entry to the south facing keefer street provides direct access to theatre and provides potential separation from remainder of building
- all non outdoor gardening program elements on main level



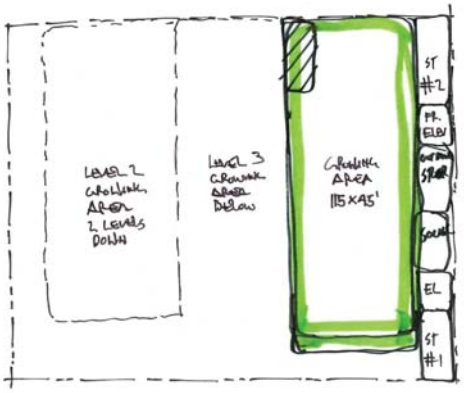
programming - option 1



programming - option 3

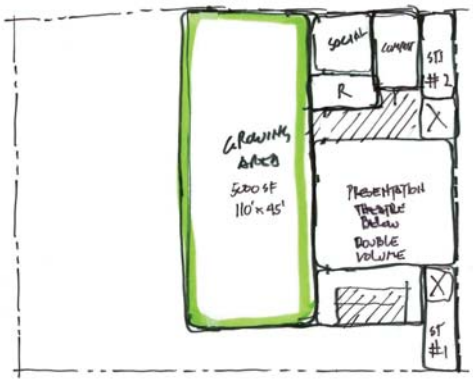
FOOD FOR THOUGHT

4th level
- rooftop garden space with uninterrupted access to sunlight from all directions
- visible from neighborhood
- served by elevator to accommodate movement of produce, soil, equipment, etc.



4th level

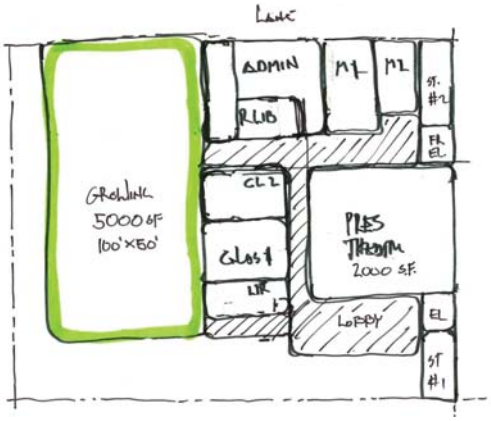
3rd level
- growing area with sunlight from south and west
- potential for greenhouse area from floor above overhanging open growing space
- social garden related space adjacent to growing area



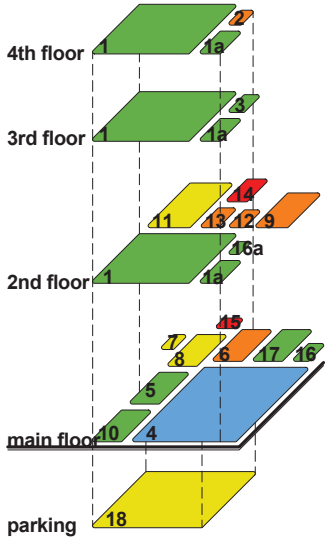
3rd level

2nd level
- learning related programming located on single level to ensure adjacencies to appropriate services
- growing areas area has direct sunlight access from south and west
- class rooms adjacent to growing area for related learning
- growing area served by freight elevator
- daylight to interior spaces from north, west and south

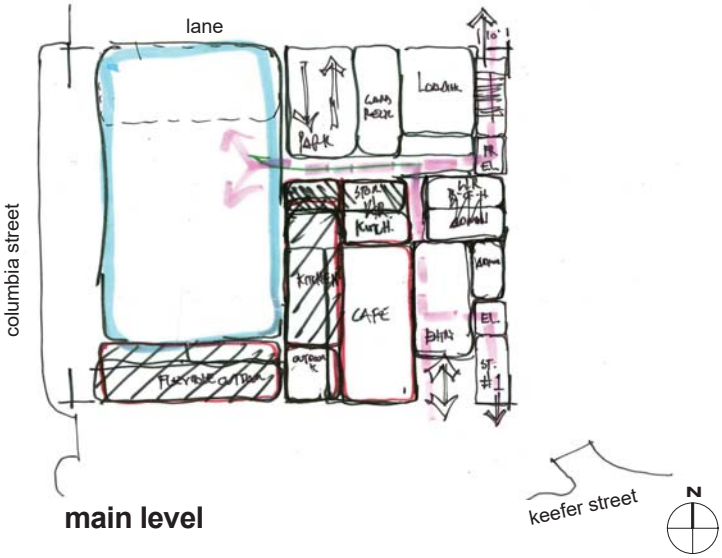
main level
- market opens to pedestrians at street level
- cafe opens onto street level for easy pedestrian access
- service areas and vehicle entry at lane, away from public
- public areas of program are at main level and can be separated from remainder of building



2nd level



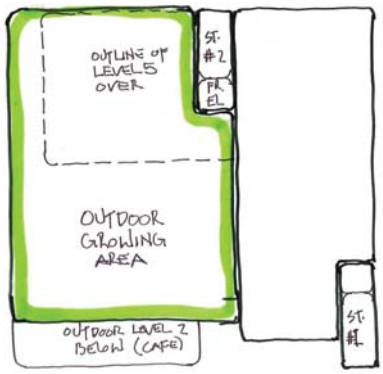
programming - option 2



main level

FOOD FOR THOUGHT

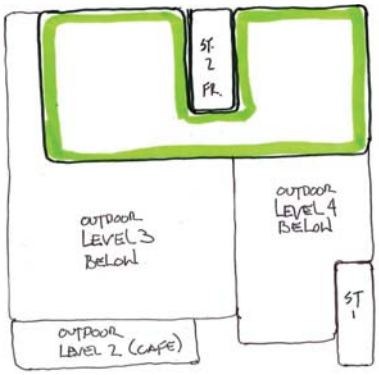
SCHEMATIC LAYOUT OPTION 4



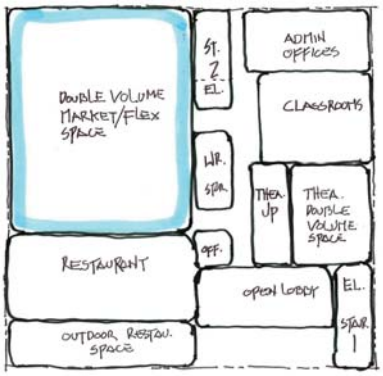
3rd level

4th level
- both outdoor and indoor (greenhouse) growing spaces for year round use
- direct sunlight for exterior growing area from the south and west directions

3rd level
- garden area with sunlight from south and west
- covered garden area with potential for greenhouse growing during winter months
- daylight to interior spaces from north, west and south

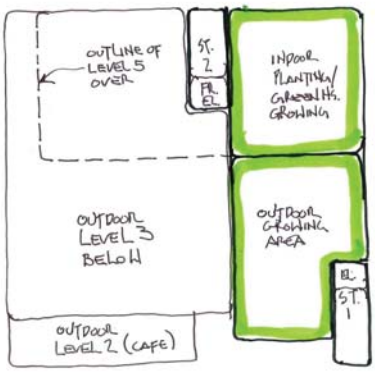


5th level



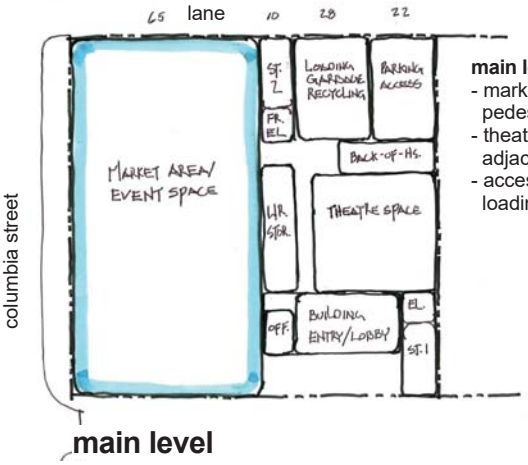
5th level
- rooftop garden space with uninterrupted access to sunlight from all directions
- visible from neighborhood
- served by elevator to accommodate movement of produce, soil, equipment, etc.

2nd level
- cafe patio faces south west
- cafe has high visibility from streets
- classrooms and admin. offices within close proximity of each other



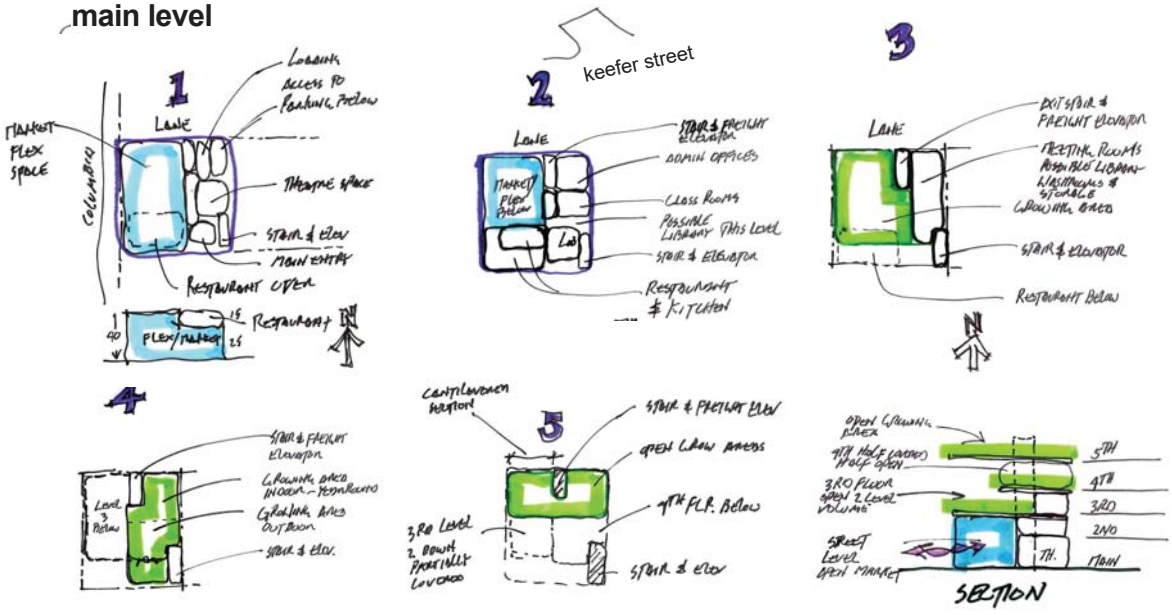
2nd level

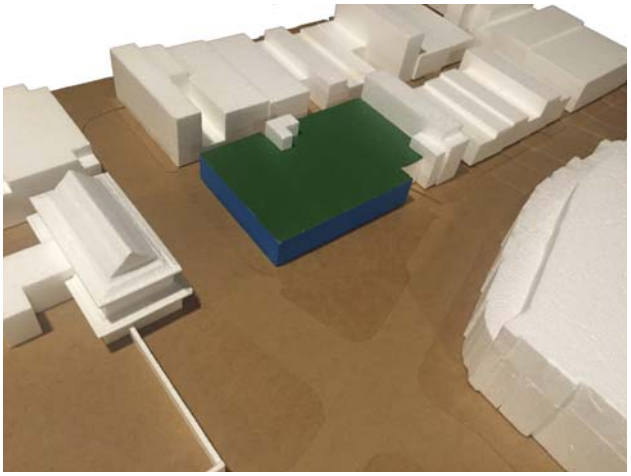
4th level



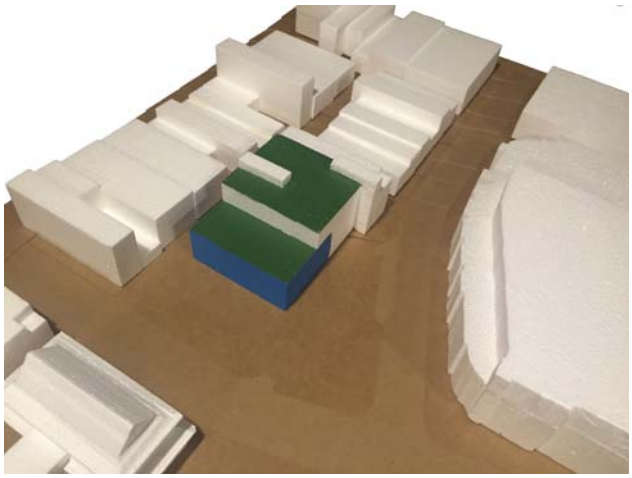
main level
- market opens to pedestrians at street level
- theatre at main level adjacent to entry
- access to parking and loading from lane

main level

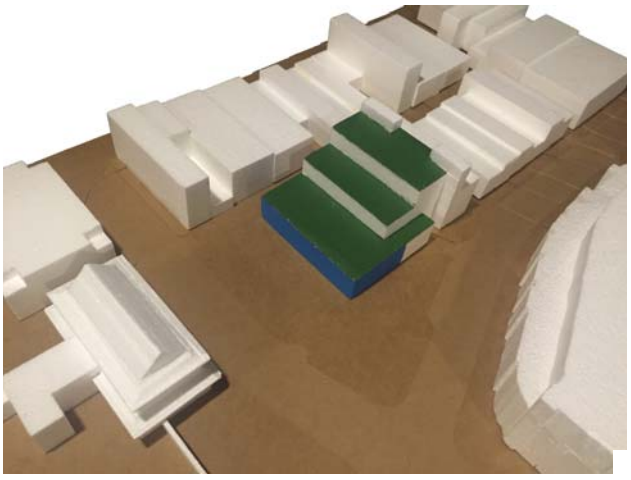




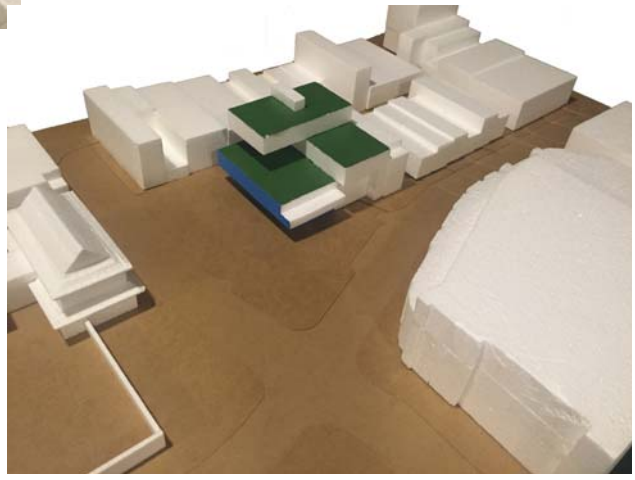
Massing Model Option 1



Massing Model Option 2

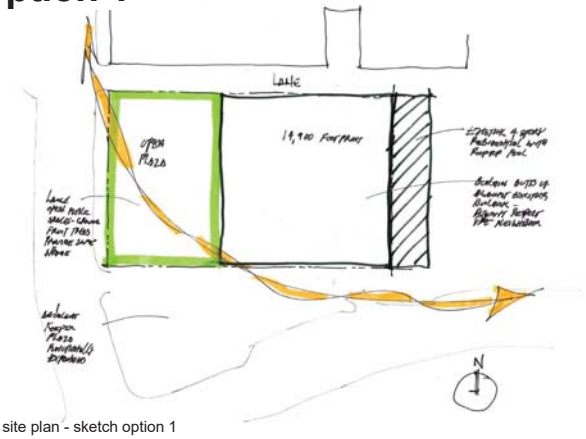


Massing Model Option 3

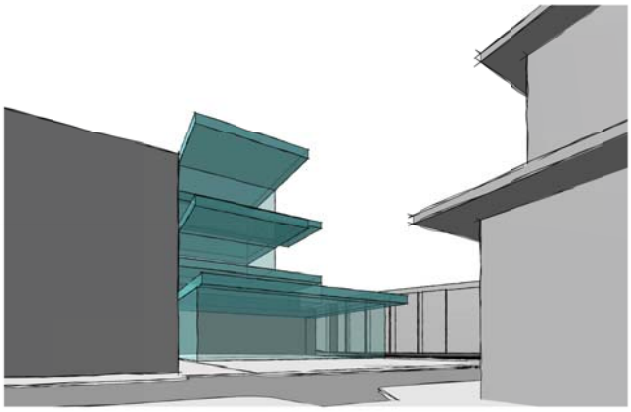


Massing Model Option 4

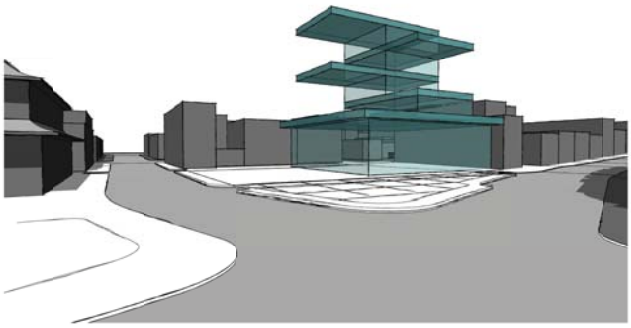
option 1



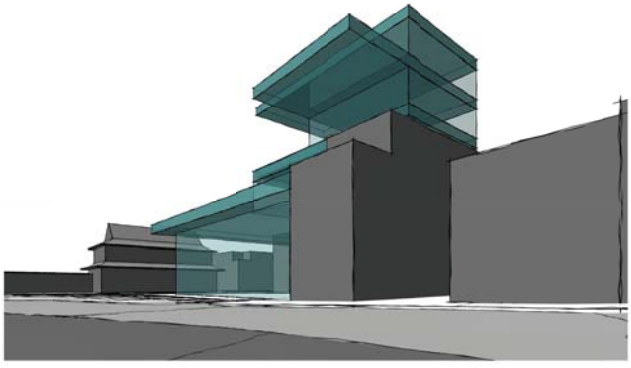
1: site plan - sketch option 1



2: massing - view from west

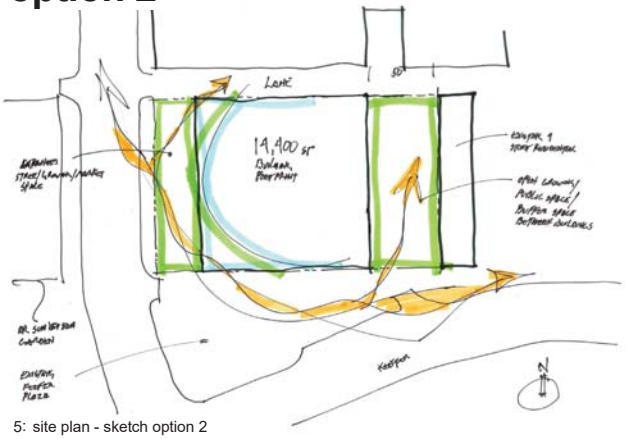


3: massing - view from south

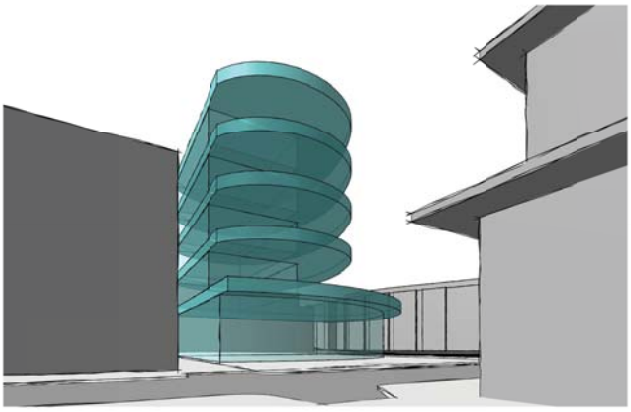


xx massing - view from south west

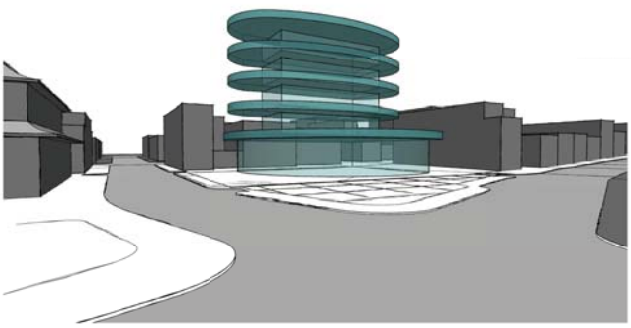
option 2



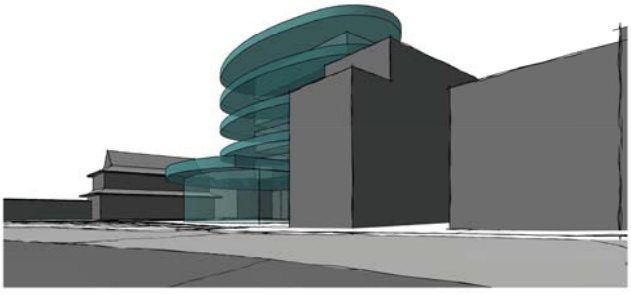
5: site plan - sketch option 2



6: massing - view from west

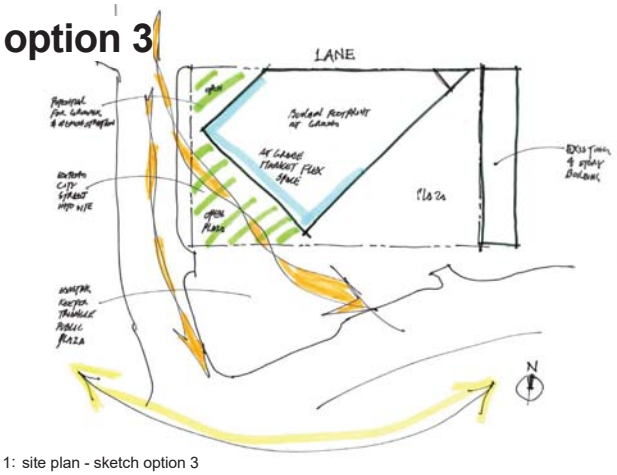


7: massing - view from south

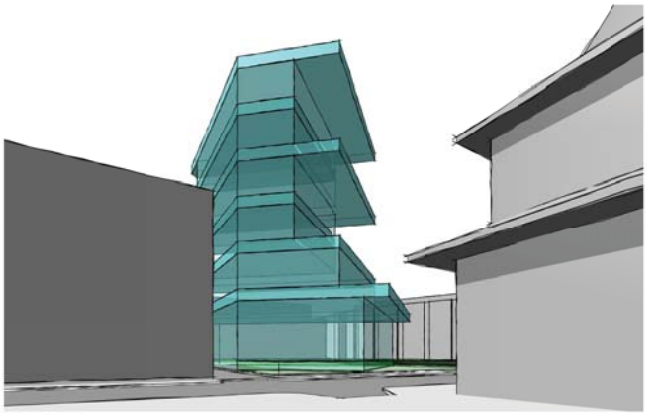


8: massing - view from south west

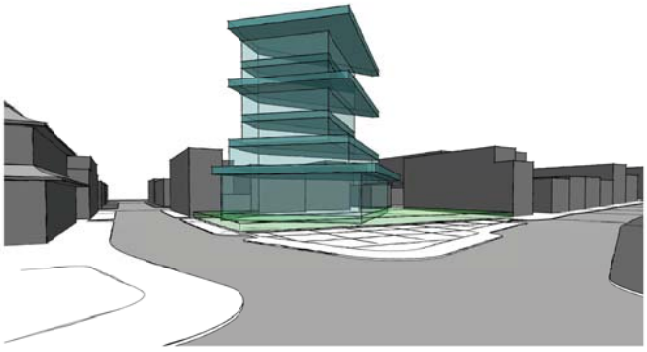
option 3



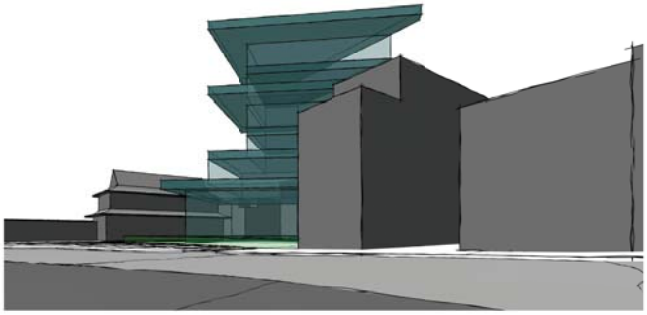
1: site plan - sketch option 3



2: massing - view from west



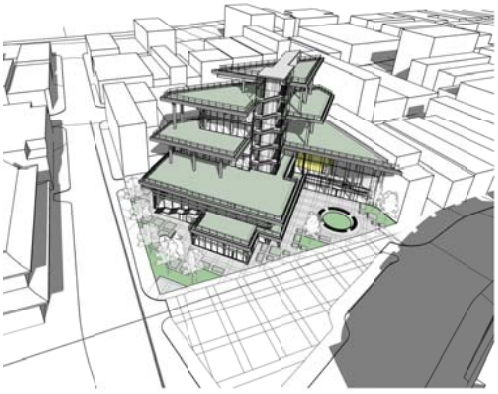
3: massing - view from south



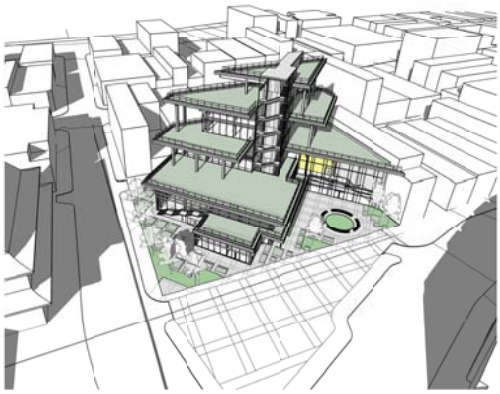
4: massing - view from south west

5: Shadow study 1 - spring equinox 10am

6: Shadow study 2 - spring equinox 12pm



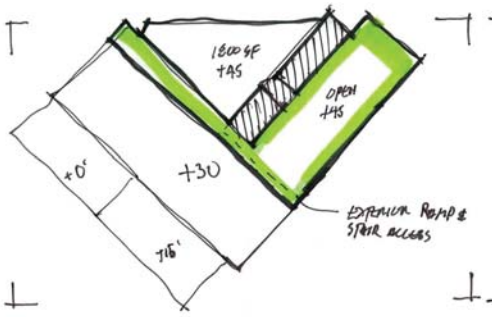
7: Shadow study 3 - spring equinox 2pm



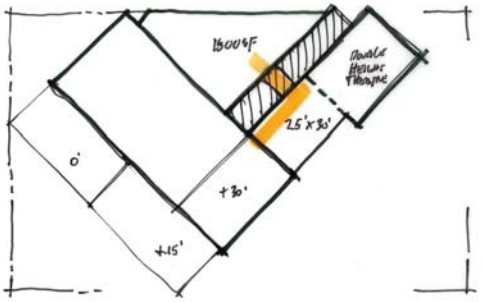
8: Shadow study 4 - spring equinox 4pm

FOOD FOR THOUGHT

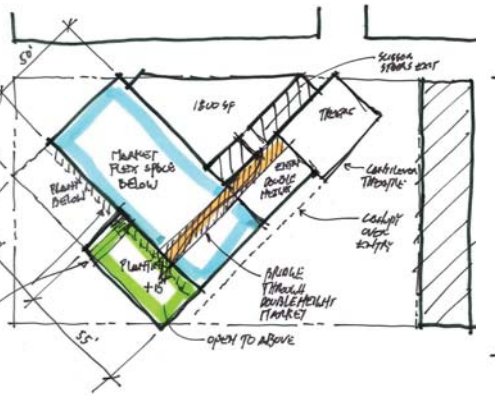
SKETCHED OPTION 3 / BUILT SKETCH MODELS



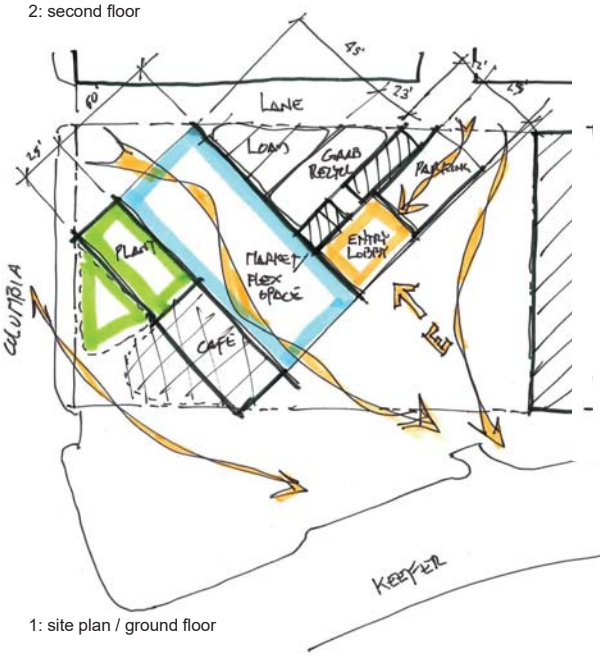
3: third floor

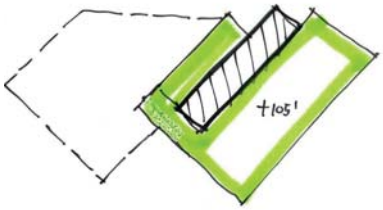


2: second floor

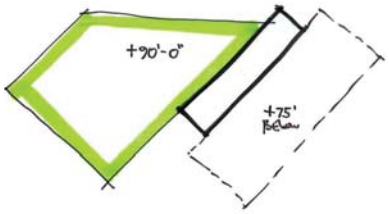


1: site plan / ground floor

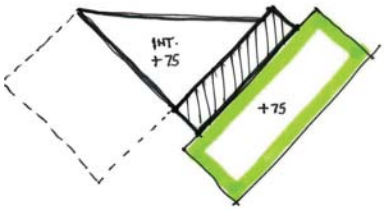




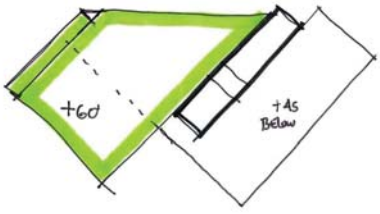
5: fifth floor



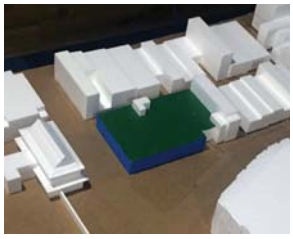
6: sixth floor



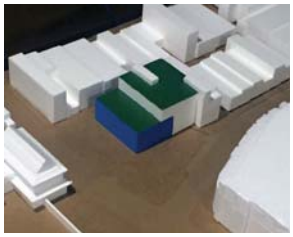
7: seventh floor



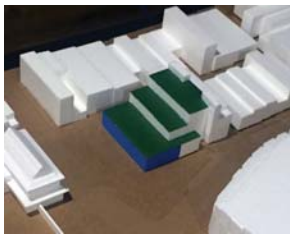
8: eighth floor



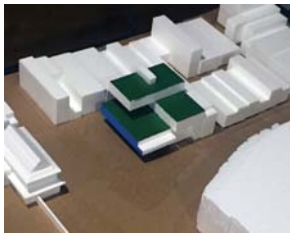
9: massing option 1



10: massing option 2



11: massing option 3



12: massing option 4

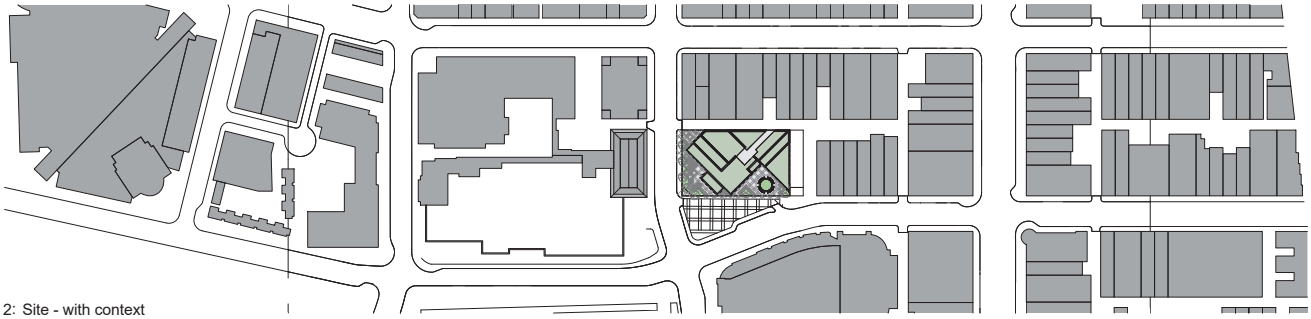
13: plate model 1

14: plate model progress

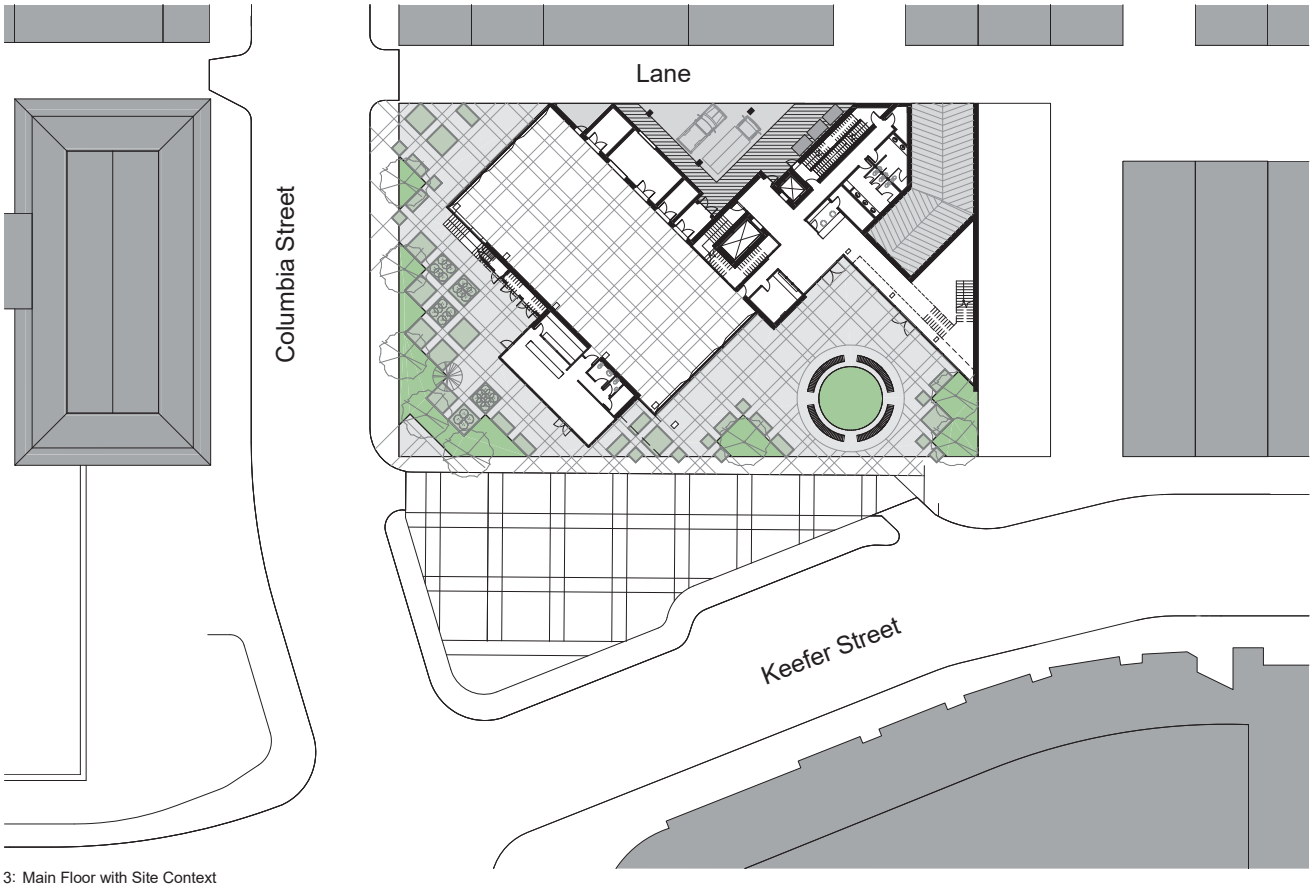
FOOD FOR THOUGHT

LEVEL 1 - WITH SITE CONTEXT

1: context section - east-west



2: Site - with context

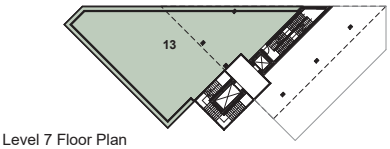


3: Main Floor with Site Context

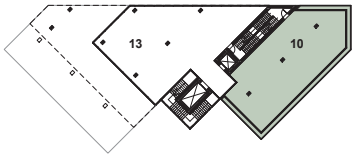
Exterior Perspective View - Main Entrance

FOOD FOR THOUGHT

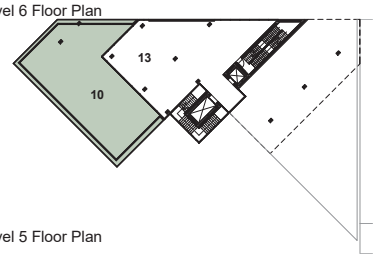
FLOOR PLANS 1 - 8



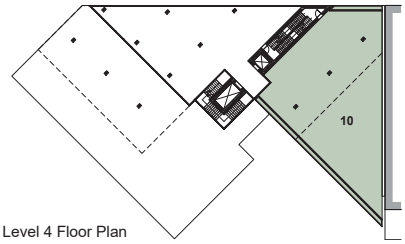
Level 7 Floor Plan



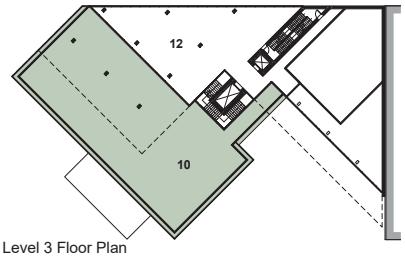
Level 6 Floor Plan



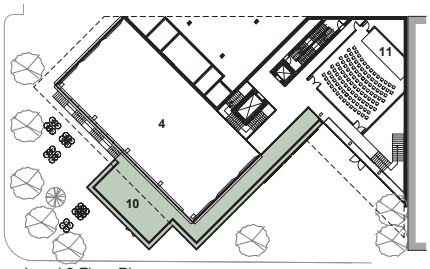
Level 5 Floor Plan



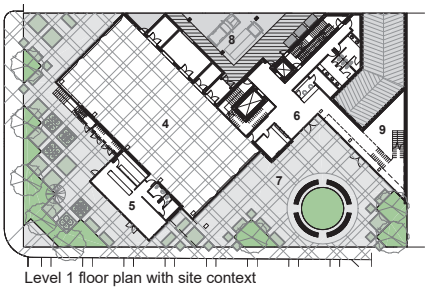
Level 4 Floor Plan



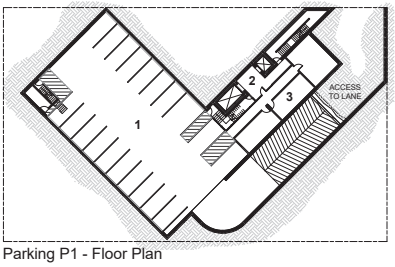
Level 3 Floor Plan



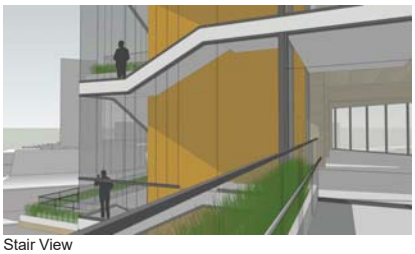
Level 2 Floor Plan



Level 1 floor plan with site context



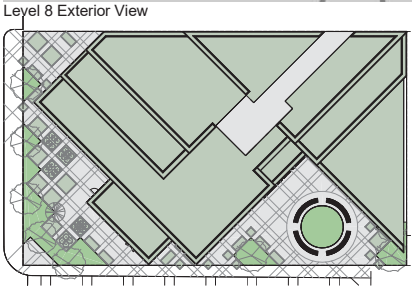
Parking P1 - Floor Plan



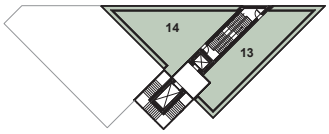
Stair View

Level 5 Outdoor Garden Space

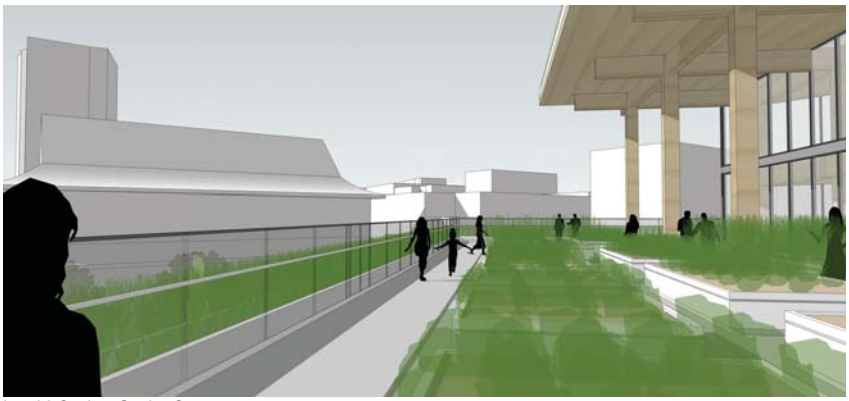
Level 8 Exterior View



Roof Plan Floor Plan

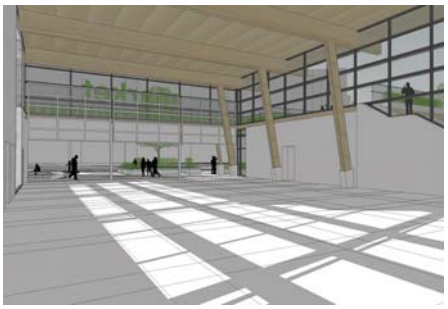


Level 8 Floor Plan



Level 3 Outdoor Garden Space

View of Entry Plaza

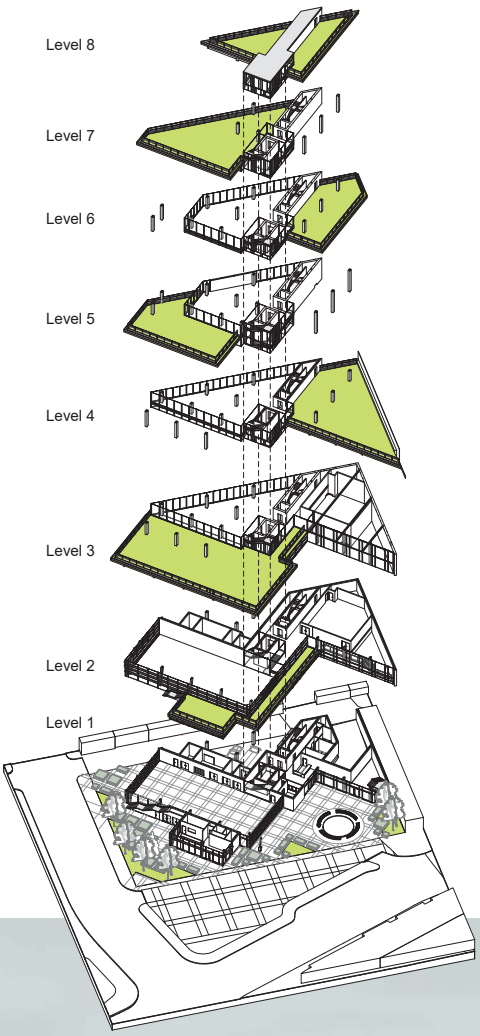


Interior Space of Market Place/ Flex Space

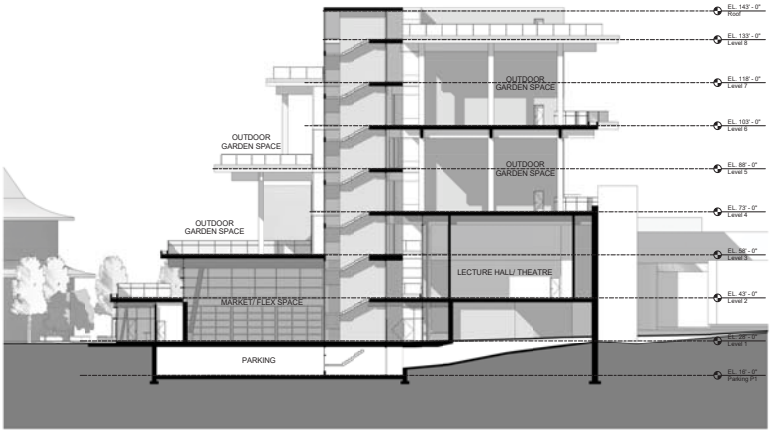
1	PARKING
2	STAIR ACCESS ELEVATOR
3	BUILDING STORAGE
4	MARKET/ FLEX SPACE
5	CAFE/ CATERING CENTRE
6	MAIN ENTRY
7	ENTRY PLAZA
8	LOADING/ GARBAGE RECYCLING
9	LECTURE HALL/ THEATRE LOBBY
10	OUTDOOR GARDEN SPACE
11	LECTURE HALL/ THEATRE
12	COMMUNITY CENTRE/ ADMINISTRATION/
13	CLASSROOMS/ LIBRARY INDOOR (GREEN HOUSE) GARDENING
14	APIARY

FOOD FOR THOUGHT

BUILDING SECTION, ELEVATION & 3D VIEW

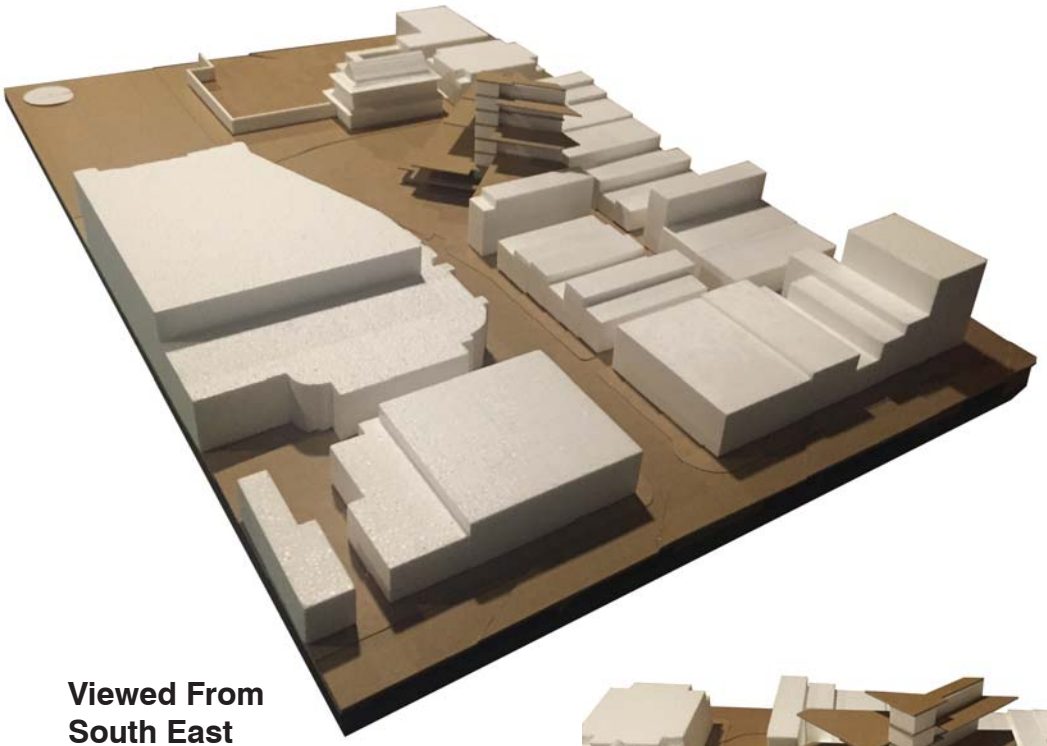


1: South-West Elevation



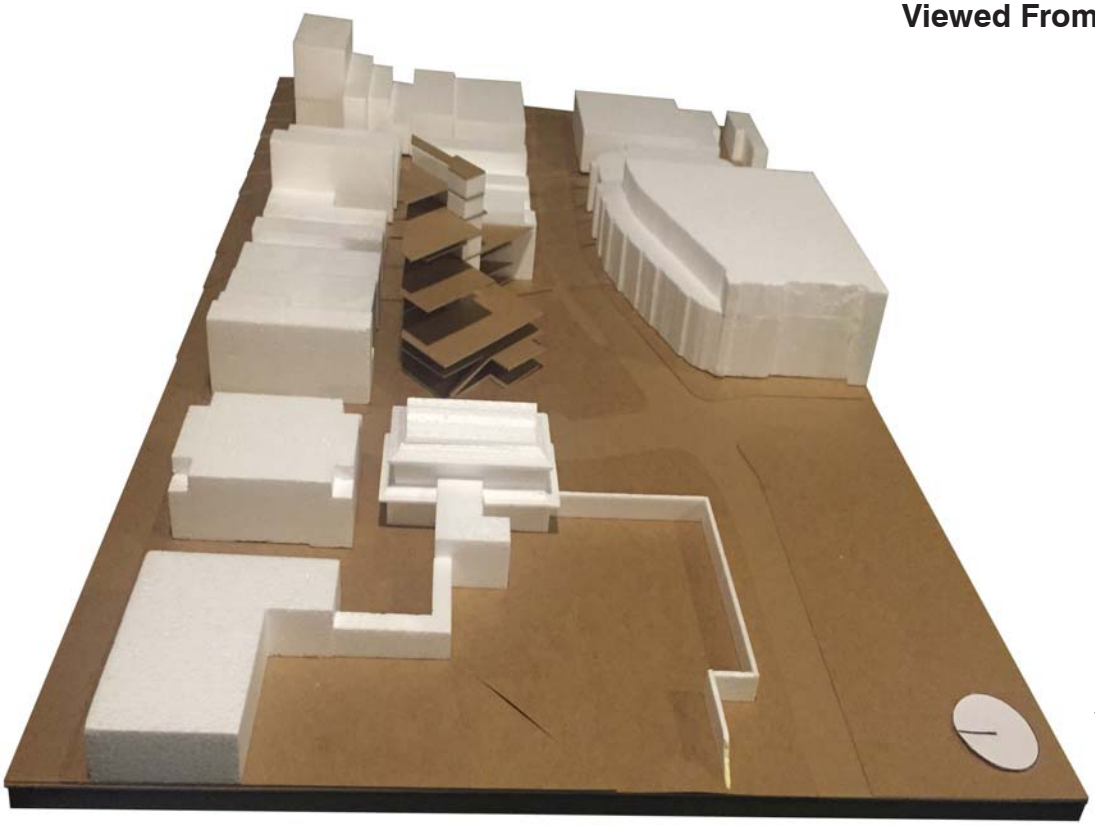
2: Building Section

3: Exterior Perspective View



Viewed From
South East

Viewed From South



Viewed
From
East

CONSTRUCTED FINAL BUILDING MODEL

View From North West

View From South East

FOOD FOR THOUGHT

View From South