



a walking tour of FOOD SYSTEMS in Brooklyn

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Living Concrete/Carrot City

If you wish to visit the businesses in this field guide, please be sure to contact the owners or managers ahead of time for permission.

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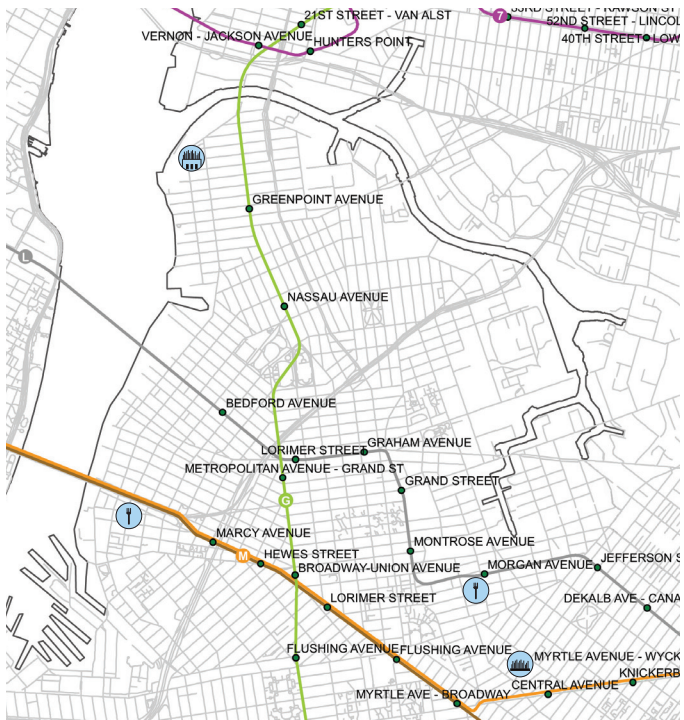
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Eagle Street Rooftop Farm



Roberta's Pizza and Roberta's Central Avenue Farm



Boswyck Farms



Marlow & Sons



This walking tour will visit several urban farms and restaurants of the Brooklyn civic agriculture movement. This tour provides the exciting opportunity to meet with urban farmers and small business owners, and learn the full scope of their current innovative ventures and their upcoming projects.

INTRODUCTION

In 2008, through the grassroots efforts of various like-minded individuals, three innovative projects to re-localize food production began to emerge in Brooklyn, New York.

It is hard to imagine that up until the beginning of the 20th century, Brooklyn was a semi-rural community that thrived as a place of food production supplying food to the booming population of New York City. By the close of WWII, Brooklyn had been completely transformed by development. In 2008, this landscape, with its abundance of large loft residences, backyards, and vacant rooftops, provided the ideal setting for a group of young, savvy entrepreneurs to locally grow and harvest produce. In the process, they rallied the support of the Brooklyn community and each other, forming a civic agriculture network of local urban agrarians who are dedicated to continuing to aggregate unconventional city land for micro-scale farming.

Even though the ventures function as separate businesses, the civic agriculture network they have forged has the potential to produce an increasing amount of local, fresh food for the Brooklyn community.

“It’s amazing how nature can be squeezed into NYC.”

- Annie Novak from Rooftop Farms



The first site on the tour will be Eagle Street Rooftop Farm in Greenpoint, located at 44 Eagle Street on the corner of West Street, 6 blocks west of the Greenpoint Avenue Station stop on the G line. The tour will walk seven blocks west of the Greenpoint Avenue station on Manhattan Avenue, taking a left on to Eagle Street, and head south to the corner of Eagle Street and West Street.



EAGLE STREET ROOFTOP FARM

44 Eagle Street

Rooftop Farm is a remarkable, 6,000 square-foot organic vegetable farm located on an industrial warehouse roof in Greenpoint, Brooklyn, overlooking the East River.

Rooftop Farm is the nation's first commercial working farm that is built on a green roof. Managed by a team of experienced farmers and volunteers, the farm grows and sells more than 30 varieties of organic fruits and vegetables, including heirloom tomatoes, zucchinis, green onion, and radishes to local restaurants and residences in Brooklyn. The farm offers public programs throughout the year. For an up-to-date schedule, visit rooftop-farms.org. Volunteers are also welcome to participate in farming by contacting the farm in advance.

Eagle Street Rooftop Farm was founded by Ben Flanner and Annie Novak. Flanner is a former e-Trade marketer turned expert farmer (and now the founder of a new rooftop farm, Brooklyn Grange, which opened in Spring 2010). Novak is the educational director of the New York Botanical Garden and now the principal farmer at Eagle Street. In November 2008, Flanner read an article about the couple Chris Goode and Lisa Goode of Goode Green, a sustainable rooftop landscape company, who had already built several green rooftops in NYC, including their own Little Italy farm, complete with chickens and fruit trees. Flanner and Novak hired Goode Green and began the search for a viable rooftop space to host the farm, and luckily found not only ideal space but also an ideal partner. They approached Gina Argentino, who





EAGLE STREET ROOFTOP FARM

owns several Greenpoint warehouses, and signed the lease for the entire Eagle Street space, which was previously a defunct bagel factory, now rented out to a film production company. Argentino, excited by the initiative, offered to fund the entire start up cost for the green roof project. With the help of an army of volunteers from Brooklyn Community, Goode Green, Flanner and Novak began the project in February 2009, and successfully transformed the industrial rooftop into a living, commercially viable organic garden. The building owner financed the initial installation costs. Goode Greene calculated the building's load bearing capacity, and in March 2009, workers hoisted 200,000 pounds of soil onto the rooftop with a crane. The soil, which consisted of 50% lightweight shale and compost, was then tilled into 16 beds, each about 60 feet long, creating a walking path along the midsection and between each row. Tomato, lettuce, kale, eggplant, bean, and other seeds were purchased from an organic seed provider, then germinated indoors in the industrial warehouse and later set aside as a cache of seedlings.

Rooftop Farm, from the earliest stages of the project until the end of the growing season, has been a community-based effort. Hundreds of volunteers have worked at the farm to help seed, sow, and maintain the crops. Many of the volunteers, including Brooklyn restaurants, friends, and local residents, provided an ongoing supply of compost. A local beekeeper also set up an apiary for Rooftop Farm, which helps pollinate the crops and





EAGLE STREET ROOFTOP FARM

provides honey. The unique nature and scale of the project constantly demanded problem solving from Novak, especially during the growing season and due to the fact that they were avoiding using any pesticides on their crops. As an efficient method of gardening, Flanner and Novak intercropped pairing peas, peppers, lettuces mixed greens, and tomatoes. Intercropping maximizes the use of space, soil, and nutrients, provides shade for neighboring crops, and supports the organic method of farming, as pests are less likely to devastate a diverse crop. Once the crops were ready for harvesting, Rooftop Farm began to supply its fresh organic food to local residents and Brooklyn restaurants, including Anella and Marlow & Sons. In its first season, Ben Flanner, via bicycle, personally delivered the vegetables to the customers.

By the end of the 2009 harvest season, Rooftop Farm had successfully demonstrated the possibility of growing and selling a diversity of tasty fruits and vegetables while rallying and inspiring the Brooklyn community.

Besides the food it grows, Rooftop Farm offers major environmental benefits. The soil on the roof can absorb more than 2 inches of rain, reducing the quantity of stormwater entering the city's sewage system. The layer of soil and vegetation also insulates the building, reducing its energy use, and extends the roof's lifespan.



The second stop on the tour is Roberta's Pizza, located in Bushwick at 261 Moore Street, a few blocks southwest of the Morgan Avenue L Station stop. From Rooftop Farm, the tour will walk back to Greenpoint Ave station of the G train, and take the train south, two stops, to Lorimer Street, where a transfer to the L-train will be made. The tour will then take the L-train west, 5 stops to the Morgan Avenue stop. From the Morgan Avenue stop the tour will head west on Harrison Place one block to Bogart Street, make a left at Bogart Street, then turn right at Moore Street. The destination will be on the right.



ROBERTA'S PIZZA

261 Moore Street

Roberta's Pizza is an exciting local eatery located in the industrial neighborhood of Bushwick, Brooklyn. Roberta's is owned by punk musician Chris Parachini, and his partners and co-chefs, Brandon Hoy and Carlo Mirarchi. Roberta's, named after Parachini's mother, has become the focal point for the neighborhood since its opening in 2007, as seven days a week it is tightly packed with a trendy Brooklyn crowd. Parachini has called the restaurant a "multifaceted compound," and that is exactly what it is.

As you approach the restaurant's graffiti covered entrance, you immediately think you have taken a wrong turn. As you enter the space, you are greeted by the pizza makers who are baking thin crust pizza in a beautiful white tiled wood-burning pizza oven imported from Naples, Italy.

The restaurant was formerly a large warehouse that has been converted into a rustic space with exposed beams, and long communal wooden tables. The restaurant's outdoor space, situated in an ex-parking lot, features picnic table seating, a beer garden, and a glass walled shipping container that serves as the studio of Heritage Radio Network, an internet-based station broadcasting food and urban farming information. The shipping container is topped with a garden that provides food for the kitchen. Roberta's offers outstanding Neapolitan style pizza, topped with tasty locally and regionally sourced



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ROBERTA'S PIZZA

products coming from Eagle Street Rooftop Farm, Queens County Farm Museum, East New York Farms, and Added Value Farm - as well as produce from Roberta's own rooftop farm. In the summer months they come from another farm that Roberta's owns, located in a friend's backyard, several blocks away on Central Avenue. Labeling Roberta's as simply a pizza parlor does not do the restaurant justice, due to the constantly changing seasonal menu that offers house made pastas, and entrees such as slow roasted lamb, fried chicken and fresh roof grown green salads.

In spring of 2009, the owners of Roberta's decided to take their successful multifaceted restaurant to another level, and began raising their own food. Chef and local food advocate Alice Waters offered to provide the seed money for Roberta's rooftop farm venture. With the help of dozens of their employees, volunteers, and amateur urban agrarians from the neighborhood, they built two adjacent open rooftop gardens atop the L-shaped Heritage Radio Network studio building, located in the restaurant's backyard.

One rooftop is used to grow a variety of vegetables and perennial herbs, including tomatoes, peppers, basil, rosemary, onions, and carrots, while the other rooftop is exclusively used as a lettuce nursery. Their goal was to grow high value greens. The gardens are made of salvaged wood and rows of wooden shipping containers. Roberta's uses an electric composter to turn kitchen





ROBERTA'S PIZZA

scraps into soil for the restaurant's garden. Vegetable seeds were purchased from a local purveyor. The irrigation system recycles the water that drips from the beds. Beneficial organisms and organic insecticidal soaps are used to reduce pests. During the first summer, the harvest was extremely successful, yielding approximately 35% of the fresh produce used by the restaurant. To prepare for the upcoming colder months, Roberta's drafted Gwen Schantz, an experienced urban gardener and food activist to build insulation for the farms. Using 3.5 inch PVC pipes, and Visqueen, a heavy plastic sheeting material, she built hoop houses, which greatly extended the growing season. For heating, warm air produced by the restaurant's walk-in cooler's compressor is funneled into the hoop houses. During the fall, Roberta's recruited local home grower Lee Mandell to build a hydroponic green house behind the radio station in an unused parking lot. Utilizing 2 x 4 discarded wood frames and recycled glass, Lee installed a hydroponic system with 40 square feet of raised beds to grow lettuce. The restaurant also has plans to build a chicken coop in the lot behind the radio station, next to the hydroponic farm.

Through their farming projects, the owner of Roberta's and Ben Flanner from Rooftop Farm have become close friends, and together have partnered in a one acre commercial rooftop farm (called Brooklyn Grange) in Long Island City, Queens. Gwen Schantz, formerly the garden manager at Roberta's, will be the lead farmer at Brooklyn Grange.



The 3rd site is Roberta's Central Avenue farm. Though not on the walking tour itinerary (because it is a private residence) Roberta's Central Avenue farm is a unique backyard farm that produces food for the restaurant.

ROBERTA'S CENTRAL AVENUE FARM

Around the same time that Roberta's Pizza was building its own on-site rooftop farm in March 2009, the owners were also scouting other locations in the area to potentially farm. Community activists from BushwickBk.com, an online magazine covering life in Bushwick, Brooklyn, who are Roberta's regulars as well as friends of the owners, offered to donate their backyard to the restaurant's farming project. With the help of a crew of local volunteers and restaurant employees, the Roberta's owners began the tedious task of cleaning up their yard. When all of the debris was clear, wood was ordered, and within a month, a maze of raised beds occupied the entire back yard. Once the beds were built, the group purchased the soil from a person on craigslist who was selling triple-screened organic soil from an old horse farm. The soil then came in two deliveries via a dump truck, but because the only access to the backyard was through the house, the group formed a bucket brigade of friends who carefully hauled the soil through the house into the planters. An array of fruit and vegetable seeds were purchased, and then propagated under fluorescent lights. In late April, the seeds were then transplanted to the flower beds. The backyard farm successfully harvested tomatoes, squash, fennel, beets, beans, peas, carrots, potatoes, onions, broccoli, kale, mustard and a mixed variety of lettuce



The 4th site on the tour is Boswyck Farms located at 1609 DeKalb Avenue, Apartment 1D, in Bushwick. From Central Avenue the tour will head southeast toward Troutman St., taking a left at DeKalb Avenue. The destination is on the right.



BOSWYCK FARMS

1609 DeKalb Avenue

Boswyck Farms is a unique and remarkable entry into the Brooklyn urban agriculture movement. In 2008, computer scientist and long time dedicated orchid hobbyist Lee Mandell converted his Bushwick loft into a hydroponic farm. Named after the original historical town, Boswyck, the farm utilizes different hydroponic systems to grow a variety of vegetables, including tomatoes, kale, basil, cucumbers, and peppers, using sustainable methods of farming.

Hydroponic growing, which is the process of growing without the use of soil, has the potential to offer more yield for less space (maximizing vertical space), and if done indoors, to provide continuous produce that is unbound by the seasons.

Visiting Boswyck farms provides the exciting opportunity to learn about the science and art of hydroponic farming. You can witness first hand the various hydroponic systems Mandell has installed. Built from inexpensive and recycled or reclaimed materials, including plastic storage bins, pumps and PVC pipes, the hydroponic systems all differ, based on the method in which the nutrient solution is distributed to the plants and roots. Mandell experiments with drip, flood and drain, wick and aeroponic systems. In each system the nutrient solution is diluted with water in a storage bin, which acts as the reservoir, and a pump helps to automatically feed the solution directly to the plants and roots.





BOSWYCK FARMS

Connected to the reservoir systems are tubes that constantly pump oxygen into the nutrient solution. He uses lightweight expanded clay pellets and coconut husks as the supplementary bedding material. Installed above each system are metal halide lamps, which produce the highest light output for their size. Mandell installs wires in each system to train the growth of the plants. He strongly believes in using the most sustainable methods possible to grow his plants, and therefore applies exclusively a combination of beneficial predator strips and insecticidal soaps to his crops to prevent harmful insect attack.

Deciding what hydroponic system to use, Mandell says, depends entirely on the type of crop one wants to grow, as well as how much of it. For example, an aeroponic system, where the roots are being sprayed constantly by a mist of nutrients instead of being submerged in liquid, yields the greatest output, but would not be an ideal system to grow lettuce, which requires less frequent nutrient dispersal. Mandell has had varying degrees of success with the hydro systems and the growing of different crops. He jokingly explains “that (he) is not truly satisfied until (he) has reengineered the hydro system at least 3 times.”

Mandell has been very successful with kale, cucumbers and basil, and less with tomatoes. For example a basil crop that was grown in PVC pipes yielded more than 2.5 gallons of pesto, which he documented on his blog site at www.boswyckfarms.org.





BOSWYCK FARMS

Central to Lee's philosophy at Boswyck Farms is educating the public about urban agriculture and hydroponic farming. He invites anybody to make an appointment to visit his Boswyck Farm loft and learn about hydro growing. Mandell hosts hydroponic workshops providing a brief history of hydroponics, an overview of the hydroponic techniques, and a hands-on workshop in which guests can build a small "self contained" hydroponic system to take home. Boswyck Farms has also developed a science curriculum for K - 12 students, utilizing hydroponic growing techniques and methods of experimentation to teach basic botany and biology.

Mandell has worked closely with the owner of Roberta's, building a hydroponic lettuce greenhouse in the restaurant's backyard, and installing supplemental lighting in their hoop greenhouse, as well as with The Bushwick Starr theater, which contains Boswyck Farms' outdoor, rooftop installation. Mandell has also been experimenting with automation techniques of the collection of data relevant to growing, specifically measuring and documenting the sunlight requirement of a particular plant with light meters. These methods, he hopes, will be a great contribution to the efficiency of his future farming projects.



The last site on the tour is Marlow & Sons, located at 81 Broadway at Berry Street, Williamsburg, southeast from the Bedford Avenue L stop. From Boswyck Farms go to the DeKalb Avenue station, get on the L train, and head west towards Manhattan, getting off at Bedford Avenue station. Walk southeast on North 7th Street towards Driggs Avenue, walk approximately 10 minutes south on Driggs Avenue towards the Williamsburg Bridge, turn right on Broadway, and the destination will be on the right.



MARLOW & SONS

81 Broadway

Marlow & Sons is a unique neighborhood restaurant (and part grocery store) located in Williamsburg, Brooklyn. It is open from 8 a.m. to 12 p.m., 7 days a week. Owned by the Williamsburg restaurateurs Mark Firth and Andrew Tarlow, Marlow & Sons is their third installment of popular local establishments that are dedicated to offering products produced from local or regional farms: After opening Diner on New Year's Eve, 1999, they established Marlow & Sons in 2004 next door, and then in December 2008 opened a butcher shop and grocery just down the street, Marlow & Daughters. Through their three Williamsburg-based establishments, Firth and Taylor have been instrumental in leading the local food movement in Brooklyn by providing local and regionally grown food to Brooklyn's dining scene.

Marlow & Sons has become a beacon of the Williamsburg neighborhood both day and night. The location includes a small country-style market and cafe in the front, and a rustic hardwood dining room in the back. The pristine, white, nostalgic market is filled with provisions that include organic produce, sourced regionally and locally, homemade pastries, artisanal cheeses, gourmet pickles, local honey, and environmentally friendly cleaning products. In addition, they sell bags made by Tarlow's wife, Kate Huling, from the hides of cows and pigs that are conscientiously raised upstate, butchered at their shop, and served in the restaurants. Executive chef Sean Rembold is responsible for Marlow & Sons as well as





MARLOW & SONS

Diner next door, changing the restaurants' simply stated, sophisticated seasonal menu daily. The menu includes a fresh selection of East Coast oysters, polenta soup, lobster fettuccine, and brick chicken. During the summer, Marlow & Sons bodega and restaurant receives daily deliveries of fruits and vegetables from Eagle Street Rooftop Farm and boasts being the first establishment to receive their produce. Sean Rembold particularly likes the farm's heirloom tomatoes and mesclun greens.

Rembold says "Even though we cannot get the volume we need from Rooftop Farm, it is pretty amazing to know that we can get excellent, fresh vegetables from them." The owners of Marlow & Sons, Mark and Andrew, have become close friends with Annie Novak and Ben Flanner from Rooftop Farm and Brooklyn Grange, and they will continue to support the farms by carrying their produce.



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