

THE POWER OF URBAN AGRICULTURE: ROOF - TOP FARMS GROWING IN NEW YORK

by Kim Assaël

Founded in 2010, Brooklyn Grange is the leading rooftop farming and intensive green roofing business in the US, operating the world's largest rooftop soil farms, with the mission to create ecologically sound urban communities by designing urban green spaces located in New York City. The urban farm not only grows food, but offers educational events, having both a positive ecological and social impact on the city. The technology type used is Rooftop organic soil farming and Hydroponics.

In the past fifteen years, New York – that struggles with a lack of green spaces, an aging sewage system that overflows when it rains, and high temperatures due to urban island heat effect- has become a hotbed of technological innovation in the urban agriculture sector and home to hundreds of community gardens bringing fresh produce, greenspace, and education to New Yorkers of all ages.

Within the New York City Food Policy, they design, build, and maintain green landscapes that balance beauty and sustainability for all walks of life, with the goal of making the built environment more habitable, climate resilient, and nourishing. The verdant spaces encourage biodiversity and native habitat attracting birds, insects, and pollinators that are so important to protect.

The roof farms are set up to absorb and use as much rainwater as possible, preventing it from entering the sewers, acting as a form of stormwater management, helping to prevent sewer overflows; for example the Sunset Park farm can absorb 750,000 litres of water in the farm beds in a single rainfall. Meanwhile, the soil provides an added insulation to the buildings (*building's membrane*), shielding it both from heat and cold.

Brooklyn Grange, with its innovative practice, leverages green roofs as an asset to the ecosystem and moreover the community. It is infact renowned for its innovative and expansive organization of rooftop farms that encourage active participation from the co-op community: sharing cooking programs, communal meals, harvest celebrations, communal areas, that can be rented as event spaces, an additional income for urban farmers. The roofs and walls of buildings can be used to generate rent for building owners having an Immediate Return of the Investment.

The farms are designed and installed with the support of engineers, who have assessed and approved the sites to ensure they can hold the weight of the soil. The roofs are made from reinforced concrete slabs with green roof systems laid down before the soil, to prevent the



roots from penetrating the surface. The soil is made up of mushroom compost blended with additional organic inputs and mixed with lightweight, porous stones for drainage.

The construction process, from planning and design to bringing the green roof to life, also adopts a collaborative approach that fosters a sense of ownership, strengthens the community bond and shall encourage folks to take full advantage of their new communal space.

The Brooklyn Grange has three main core programs which employ around 42 persons of staff: 12 Full/Time and 30 Part/Time/seasonal:

1. Flagship Farm
2. Brooklyn Navy Yard Farm
3. Brooklyn Grange Bees Apiary.

The team of Brooklyn grange is also working to positively affect the entire food system through a multi-faceted approach to urban farming: cultivating 2.5 acres of rooftop according to organic practices increases access to fresh, healthy foods. They also aim to connect urbanites with food, farming, and nature through education and events; they aim to partner with numerous non-profit organizations throughout the city, and to add more green space to the community by designing and installing rooftop farms, terrace gardens, backyard homesteads, and green spaces for private clients and organizations around the city and beyond.

Since its inception in 2010, Brooklyn Grange has developed multiple sites, including those in *Long Island City*, the *Brooklyn Navy Yard* (Brooklyn navy yard is Est. 2012 | 1.5 Acres), and *Sunset Park* (Sunset park is Est. 2019 | 3.2 Acres), covering over five acres in total. These farms produce a variety of crops, by using compost made from New York food waste to fertilize their farms, and practicing crop rotation to avoid nutrients depletion. They foster biodiversity, with greenhouses, patios, and paths enhancing the urban landscape.

Operating the world's largest rooftop soil farms, using soil-based organic growing practices as well as a state-of-the-art hydroponics system, Brooklyn grange produces over 50-80,000 pounds (or even more) of organic produce a year which is sold at monthly [Sundays farmers markets](#). In addition, the Sunset Park farm gives the possibility to residents of the area to share the harvest through a community supported agriculture (CSA) and [a sliding scale CSA program](#).

They produce fresh, local produce including leafy greens (such as lettuce, kale, and chard), root vegetables (such as radishes and carrots), fruiting vegetables (such as peppers, tomatoes, and gourds), flowers (such as sunflowers, echinacea, and nasturtium), and also various hot sauces made with hot peppers grown on the farms. Of this, about 40% goes to farmers markets and wholesale clients like restaurants and buying clubs. The rest (approximately 60%) goes to its community supported agriculture (CSA) program, tied to the newly established equitable food distribution program. Based on reciprocal trust there is the possibility to have access to a weekly subscription of fresh farm vegetables in exchange of a certain amount of time weekly dedicated to pick up the harvest for 20 weeks. The sliding scale shares are based on a self-identification process that is private and will not be reported or require any proof or documentation.

[A Family Budget Calculator](#) of the Economic Policy Institute's (EPI) measures the income a family needs in order to attain a modest yet adequate standard of living. The valued share of \$25 is available for each member committed to contribute the same percentage of income on food. In 2023, Brooklyn grange grew an estimated 42,577 lbs of



vegetables to community members at no or low cost through the [Equitable Distribution Program](#) and the [Food Equity Funding Partnerships](#)

During the primary growing season (spring, summer, and early fall), it is possible to purchase the items directly at their rooftop farm in Sunset Park on Sundays, or at the McGolrick Park farmers' market in Greenpoint, Brooklyn. Additional retailers that sell their products include [Fresh Direct](#), [Local Roots](#), [Farm to People](#), [Natoora](#), [Foster Sundry](#), and [The Meat Hook](#).

The Javits Center collaboration is another notable example of Brooklyn Grange's impact. This project includes a one-acre rooftop farm with vegetable beds, a greenhouse, and a food forest. The farm supplies produce to the convention center's kitchens and local food pantries, promoting sustainability through organic practices and innovative composting systems. The site also serves as an educational space, offering tours and engaging visitors with the principles of urban agriculture ([Living Architecture Monitor](#)).

Overall the farms of Brooklyn Grange act as a living laboratory too, hosting educational programming and events, and providing consultation on urban farming, design, and installation services to clients around the globe. They seek to create a sustainable model for urban agriculture in addition to nurturing both the environment and public health, providing opportunities to not only grow organic food but promote environmental sustainability, making it a model for urban farming worldwide ([NYC Food Policy Center \(Hunter College\)](#)).

Just recently, the city passed local laws requiring new roofs, or those undergoing construction, to be covered in either solar panels or a green roof system. In September 2022, in order to better support these resources, the Mayor has created the Mayor's Office of Urban Agriculture to strengthen the role of urban agriculture (both community gardens and private companies) to promote a more sustainable and local food system in NYC.

Though Brooklyn Grange is an inspirational story full of lessons that shall be helpful to anyone who aims to create a business that does more than just turn a profit. It restores the connection between people and the natural world. It creates meaningful livelihood opportunities and green spaces in the built environment to foster more liveable and climate-adapted cities that can easily be replicated elsewhere.

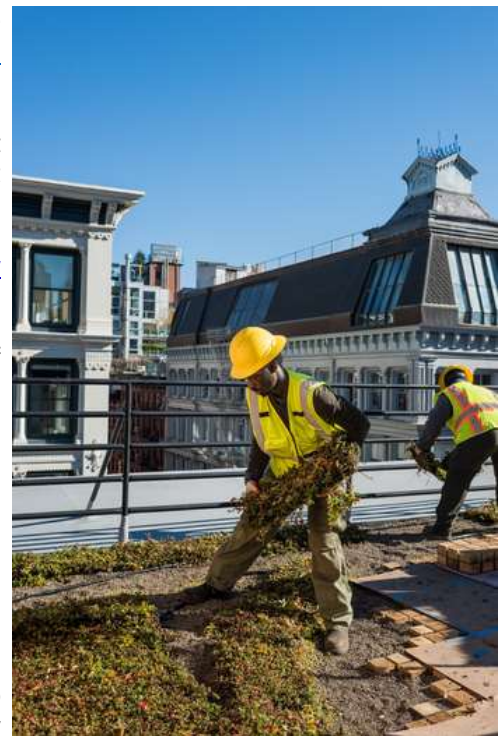
[A comprehensive guide to installing a green roof on your NYC co-op building is available](#) in the website and it explores the step-by-step process of converting the New York City co-op roof into a green roof.

Detailed information about Brooklyn Grange is available on their web site <https://www.brooklyngrangefarm.com/>, or contacting info@brooklyngrangefarm.com.

To know more

[Brooklyngrange.com website](#)

[Brooklyngrangefarm.com.about](#)



[Brooklyn Navy Yard](#)

[Harvest Share](#)

[Atlas of the Future](#)

[NYC Hunter College](#)

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