

# Raising The Roof | Rodale's Organic Life

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## Raising the Roof

**With over 5.6 million square feet of rooftop gardens and counting, Chicago could be on its way to being the greenest city in America.**

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PHOTOGRAPHS BY LUCY HEWETT

Dorothy Mackevich Marks has tried everything to keep the raccoons from stealing the ripe [melons](#) on her rooftop garden. She even tried dropping her cat's combed out hair as a deterrent. "My husband was laughing at me. It's a little humiliating," admits the Evanston, Illinois, homeowner. She had a rooftop garden designed and built above her garage originally as a project to do with her daughter. These days, she finds solace among the [Sun Gold tomatoes](#), [scallions](#), and [lovage](#) with Lake Michigan as her backdrop.

Mackevich Marks is hardly alone. Urban farming is enjoying a renaissance. In a city as densely populated as Chicago, sometimes your only option is up. According to Michael Berkshire, green projects administrator with the Department of Planning and Development of Chicago and who oversees [City Hall's dynamic and Instagram-worthy rooftop garden](#) that spans a city block, the number of rooftop gardens are rising.



Michael Berkshire, green projects administrator with the Department of Planning and Development of Chicago,

oversees the rooftop garden atop City Hall, which is home to over 200 varieties of plants.

Spurred in large part by former Chicago Mayor Richard Daley who was keen on finding ways to combat the urban heat island effect, improve air quality, and making Chicago the greenest city in America, plans for City Hall's rooftop garden were put into motion in 2000. Back then, only a handful of buildings and residences had rooftop gardens.

Berkshire was hired to promote and increase the number of green roofs on buildings. To make that happen, the city of Chicago implemented a policy in 2004 that mandated sustainable elements that will provide public benefits if a new development project was receiving any sort of financial assistance from the city, such as tax increment financing (TIF), or large scale developments that exceeded a certain size either by height, number of units, or square footage. Green roofs qualify and since the policy was implemented, the city has seen the number spike from a handful of rooftops to 509 green roofs totaling almost [5.6 million square feet in 2013](#), the last year the city bought satellite imagery.

Today, City Hall's rooftop garden boasts approximately 20,000 plants, consisting of more than 200 species, including shrubs, vines, trees, as well as a [beehive](#) that produces around 200 pounds of honey. "Most of the plants are either indigenous or adapted prairie plants," notes Berkshire. "We wanted to stay with that because that's our natural landscape, and we didn't want to add a lot of chemicals and to minimize the amount of watering [required]."



Pollinators benefit from green roofs—the beehive at City Hall's rooftop garden produces 200 pounds of honey each year.

Though not open to the general public, City Hall's rooftop garden is a welcome sight for residents and employees who live and work in the skyscrapers in the surrounding area. It also serves as a sort of living laboratory: the other half of the 12-story building (and roof) houses the Cook County administrative offices. Since half of the roof is barren, the rooftop garden serves as a demonstration project to show how a rooftop garden affects the building it stands on, compared to a conventional roof.



An aerial view of the rooftop garden at Chicago's City Hall, which occupies one half of the 12-story building's roof. Photograph Courtesy of [TheNatureofCities.com](http://TheNatureofCities.com)

"Up until probably four years ago, the County had just a typical black asphalt roof," explains Berkshire. "We were monitoring the temperature differences between the two roofs. On a 90° Fahrenheit day, our [green] roof always hovered around 90°. Whereas, at certain points in the day, the County's roof was as high as 170°. There was an 80° difference between the two roof temperatures. The reason the ambient temperature is lower is because of the evapotranspiration process of the plants. It actually transpires moisture into the air and that helps cool it down."

Chicago residents see other benefits from the increase in rooftop gardens, says Berkshire. Aside from lowering temperatures, they also aid in storm water management and providing a habitat for wildlife. "Chicago is on a major bird migratory pathway, and so it provides areas for birds to rest on their trips either north or south," he adds.

*Holy shit, we can grow food up here!*

Meanwhile, 10 miles due north in Chicago's Edgewater neighborhood and growing since 2007, is the first certified organic rooftop farm in the United States above [Uncommon Ground](#), a restaurant that serves contemporary comfort food with an emphasis on seasonal, regional and organic ingredients.

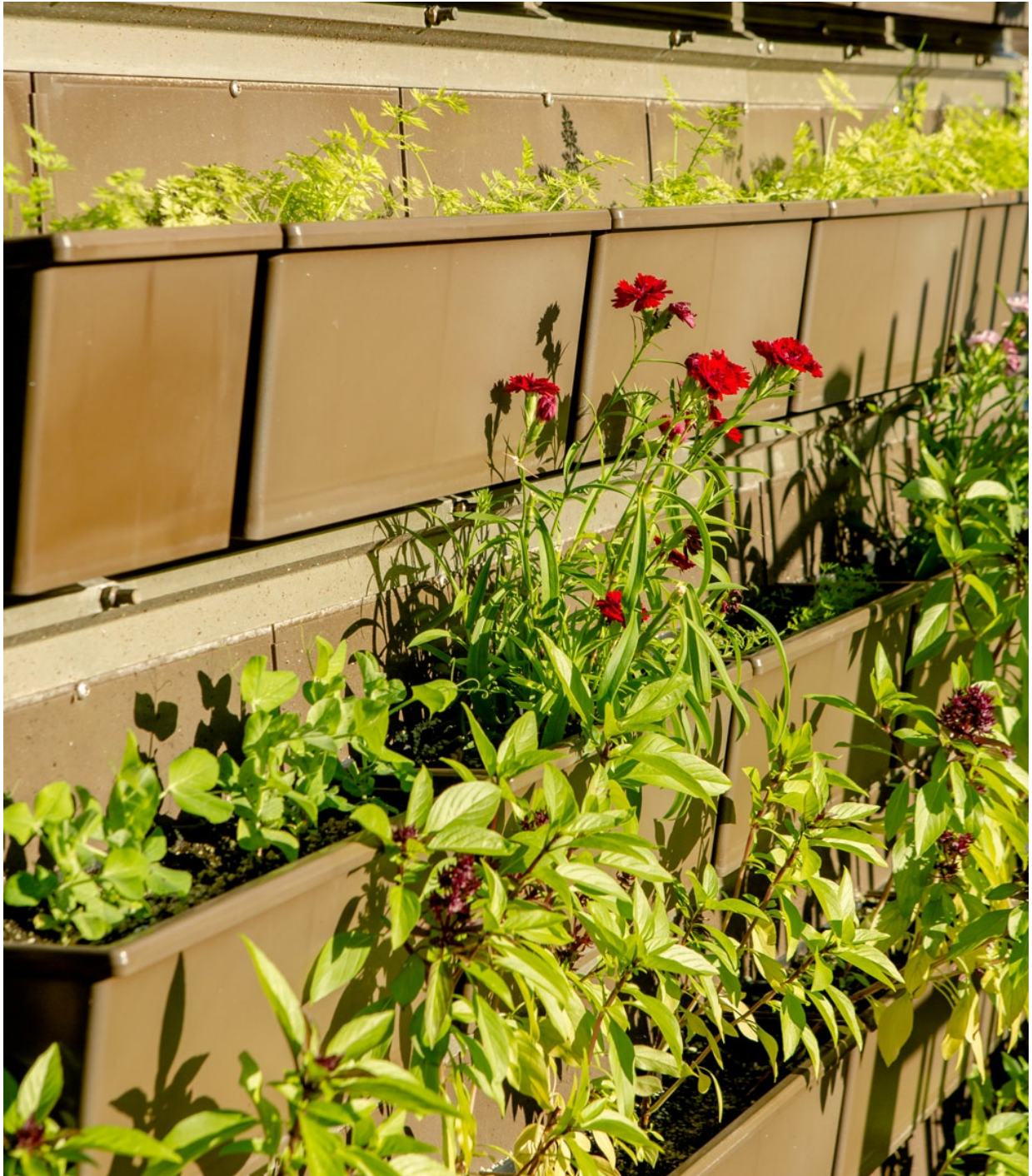
Helen Cameron, owner of Uncommon Ground, fondly recalls when she and her husband were considering the second restaurant location and he held the ladder for her while she climbed up to scope out the rooftop. A rooftop garden wasn't on her initial wish list, she says, but after seeing the expansive space with the silver roof lining she yelled to her husband, "Holy shit, we can grow food up here!"

The thought of [freshly picked tomatoes](#) at the ready overwhelmed and inspired her. "It was just so large and so full sun and the picture in my head at that moment was red ripe heirloom tomatoes, because I think in food," Cameron

admits.

Just don't make the mistake of calling it a rooftop garden.

"We call it a farm, because it is a farm," Cameron says, explaining that there is a customer and producer relationship between the farm and the restaurant's chef and clientele. "It was really meant to be a production farm versus just a garden. We try to make that point, to let people know that you really can grow a substantial amount of certified organic food, in an urban environment. In fact, on a roof."



Herbs, peas, and flowers flourish in a vertical plot at Uncommon Ground's certified organic rooftop farm.

Cameron adds you can't really certify an organic garden. She employs two farm directors, Charlie Patterson and Allison Glovak, to oversee the farm and maintain its certified organic status while maximizing their 2,500 square feet

of space for production. Everything from **timing crops** so they have one ready to go in as soon as one is done, to **managing pests organically**, and maintaining the soil structure. While some of the **raised beds** are stationary, the team is partial to their **EarthBox gardening system** because it allows them to move plants and take advantage of sunlight or wind breaks.



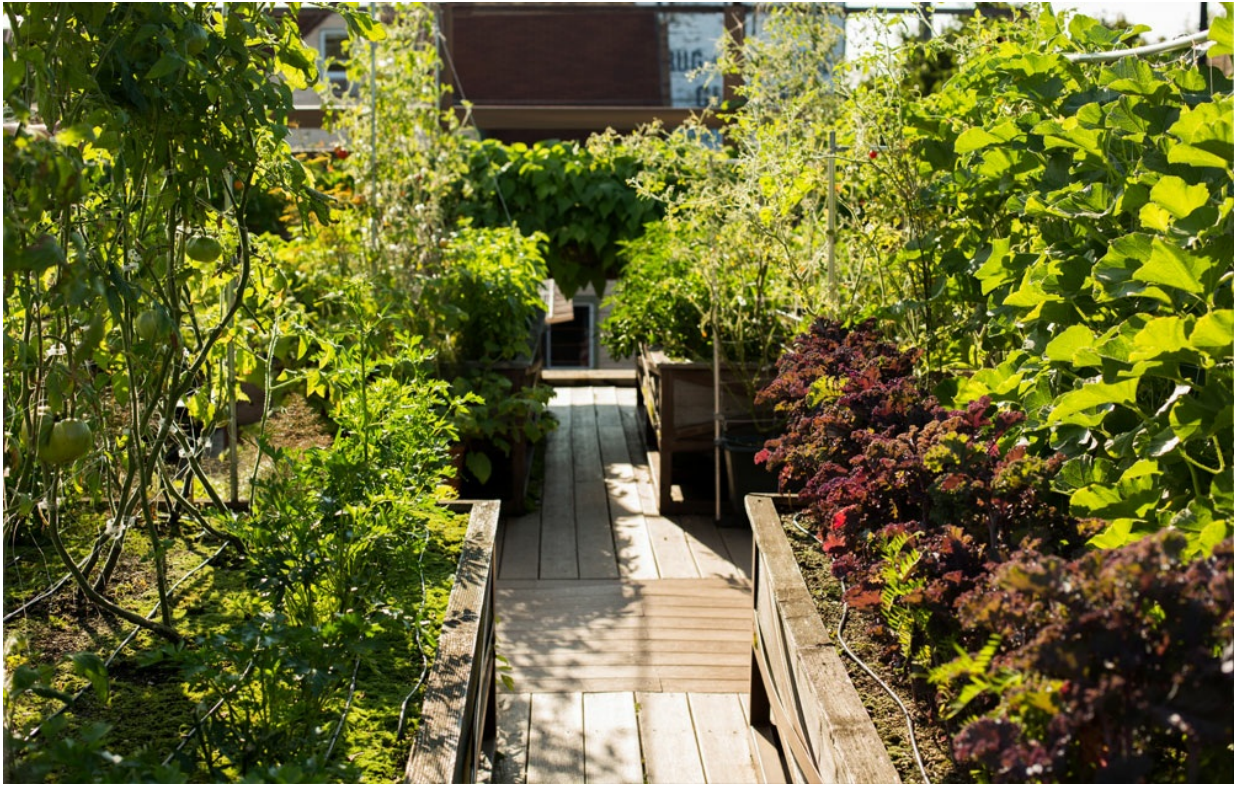
From left to right: Farm director Charlie Patterson, farm director Allison Glovak with daughter Juniper, Michael Cameron, and chef Helen Cameron.

Foodies at heart, they admit they get giddy when they meet in February to **review seed catalogs** and discuss what new things they'll add. Last year's surprise find was a heatless habanero. "You see something like that described in this new catalog and you're like, 'Okay what's this really going to be like?' The flavor is so amazing," says Patterson. "You get all of this complex wonderful pepper flavor but without the heat. Then the seeds have just a little hint of spice."

"Zavory," interrupts Cameron, "that's the name of the pepper: Zavory pepper."

Having your own farm doesn't always mean the chef gets what he wants, though. "Chefs aren't always aware of what's going to grow well or even what grows really well in our climate," notes Slovak. "Sometimes [Chef Alex] comes to us with things he wants and we have to be honest and say, 'I'm sorry, that's not going to do fantastic on our roof in our environment.' I always say it's a little bit of a dance between us to figure out." The chef really wanted Mexican Sour Gherkin Cucumbers, so they tried those last year.

"There's a continuum of information that's flowing as we go along so that he knows what's developing and can be prepared when **20 pounds of beans** come his way," says Cameron. In cases where production is dying down and there isn't much left, ingredients are incorporated into a special of the day or becomes part of the sunshine salad. "Our sunshine salad is just seasonal vegetables." It changes based on the season and availability and communicated to diners by the wait staff. Nothing is ever wasted.



Raised beds at Uncommon Ground's certified organic rooftop farm.

Since they've been keeping meticulous records from the beginning, Cameron has noticed the [effects of climate change](#) firsthand. "We've experienced some really intense storm events," she says. "Luckily, on rooftops you don't deal with flooding, and drought isn't really an issue for us because we irrigate."

Unlike Mackevich Marks, Cameron doesn't have to fight with raccoons and because the farm is on the roof, deer aren't an issue either. But weather will always be a challenge when you're relying on Mother Nature. "We do a graph every year of our production and when it happens, and every year it's been quite different," she shares. "We really haven't had a similar season since we've started the farm, which is fascinating."

Glovak notes that it's not just the temperatures that affects production, it's the massive fluctuations. "It's interesting because you see as temperature goes up, production goes up to a certain point, and then once it hits a certain level of heat and humidity, it plateaus and production starts dropping again at that temperature."

### *Raising the roof at home*

When Mackevich Marks decided she wanted a rooftop garden, she reached out to the experts to help her. She hired an architect to build a garage that could withstand the weight of the garden and [Sara Gasbarra](#), founder of Verdura, a garden design company that creates and maintains culinary gardens for chefs and restaurants, to design it with her needs in mind.

While maintaining a rooftop garden can be done by almost anyone with a general idea of how gardening works, everyone agrees that hiring an expert to get it set up in the short term will reap rewards in the long-term. In some cases, you might need to secure a permit.



Dorothy Mackevich Marks in her Evanston, Illinois rooftop garden.

"The most important question you have to ask is 'can my roof handle the additional weight?' says Berkshire. "That's the first question because it can be very expensive to upgrade your structure. If you have additional capacity, then look into it." The City of Chicago maintains a list of green roof providers who are very active in the city on its website.

But once it's built, the fun begins with choosing the crops. Gasbarra recommends starting with simple things and that you'll use regularly. "Herbs are super easy and they yield a lot," she says. "They're cut-and-come-again generally; [chives](#), [basil](#), [rosemary](#). I don't know how you could kill rosemary."

Mackevich Marks surprised herself with how much she's been enjoying cooking with everything she grows. She puts parsley in almost every dish and relishes the fact that it's come from her garden. "When the [potatoes](#) are harvested, I'll make potato soup," she says. "I make a really good beet soup that the potatoes go in, and we have roast potatoes. We use the potatoes until they're done."



Vegetables and flowers flourish in Mackevich Marks's rooftop garden.

She always includes something different or risky, just to see how it'll turn out. Although she vowed she wouldn't try a melon or squash again because she didn't want to be heartbroken again, the possibility of enjoying that sweet taste grown on her rooftop is too strong, she admits.

"There's the farm to table that's the buzzword now," she says. "When it's really your ground to your table, that's very satisfying."

### | *Tips On Starting a Rooftop Garden*

Weather plays a big role when it comes to rooftop garden design but that's only part of the story. Structural capacity, **irrigation** and drainage, and what to grow are among the checklist of things to be considered.

**1. Time it right.** The best time to construct a rooftop garden is when a roof needs to be replaced or newly constructed and features such as a waterproof membrane, root-resistant layer or certain types of **containers** can be incorporated into the roof design.

Berkshire highly recommends hiring a rooftop garden designer since the designer will know exactly what can and cannot be done and is familiar with requirements such as securing the right permits from the city.

Budget between \$20-30 a square foot for a bare bones rooftop garden, he says.

**2. Pick plants for your region.** Rooftops can be a rough environment for plants due to the effects of wind, heat and rain. "At first year, we realized how much the wind affects things up there and how important it is to have wind breaks in certain areas," says Cameron.

**Native plants** are attractive options for rooftop gardeners because they can withstand harsher conditions, are environmentally beneficial since they provide much-needed habitat and survive well on rainwater.



**3. Hedge your bets.** Diversify your plants to maximize the return on your investment. "Start with very simple stuff and then do one risky guy," recommends Gasbarra. Easy wins like herbs or cherry tomatoes that generally perform well and yield a lot really is motivating, adds Mackevich Marks.



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