



SQUASH WASH: Howard Brosius shows Tree House camper Anisash Curry, 12, how to clean freshly-plucked zucchini.



Tiny Teachings

CHIPPING HILL MICRO FARMS MAKE AGRICULTURAL EDUCATION POSSIBLE YEAR-ROUND *by* ARIELA ROSE

PHILADELPHIA'S FLOURISHING URBAN AGRICULTURE movement has produced a bounty of youth education programs focused on farming. But providing year-round lessons on sustainable agriculture can be difficult in the city. First, there's the challenge of finding land; then there's the long winter season, during which most edible plants die or go dormant. Howard Brosius has set out to solve this problem with his Chipping Hill Micro Farms—growing containers outfitted with heating systems that allow them to be used as agricultural teaching tools all year.

Brosius, 65, grew up working the land on his family's two Chester County farms: a total of 200 acres that was home to 100 Guernsey cows, a large vegetable garden and four mushroom houses. Brosius went on to receive his degree in agriculture from Penn State, but rather than return to the fields, chose to earn his MBA from Temple University and work as a stockbroker for 40 years. Though he'd strayed a bit from his roots, Brosius continued gardening at his Glenside home, where he began building micro farms two years ago.

Micro farms are exactly what they sound

like: small growing systems of vegetables, flowers and herbs housed in cedar boxes. Similar in appearance to a typical raised bed, the boxes come in two sizes: a portable, 80-by-27-inch, two-paneled version; and a larger, 4½-by-8½-foot, four-paneled version. Both are built by Brosius, using wood panels cut to specification by a local big box store where he has become a regular customer.

"I build [the large boxes] on-site, and the small ones I build in my shop," says Brosius. "I can build and install one of these in a day."

The micro farms' hinged polycarbonate panel

roofs take longer to construct, and are designed to capture light and heat from the sun. The small panels soak in the rays, creating a warm blanket that can keep temperatures in a micro farm at 50 to 70 degrees, even if the outdoor temperature is a frigid 10.

Since the roofs themselves cannot generate adequate heat once Philadelphia's ice-cold winter settles in, built-in radiators powered by two 40-watt bulbs provide warmth for smaller farms, while an electric ceramic heater or heated towel rack embedded in the soil warms larger models. Either way, thanks to the innovative design of micro farms, schools and community centers can offer children year-round lesson plans on sustainable agriculture, an educational component lacking in most urban institutions.

The need for agricultural education in the Philadelphia region was made clear to Brosius when he worked as a consultant with the Douty Foundation, a private organization that gives grants to social service projects. The organization's benefactors had a particular interest in educational pursuits that benefited children,

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MICRO FARMS

COMPLETED INSTALLATIONS:

- **Tree House Books**
1430 W. Susquehanna Ave.
- **Urban Tree Connection Community Garden** 54th St. and Wyalusing Ave.
- **Jubilee School**
4211 Chester Ave.
- **North Light Community Center**
175 Green Lane
- **New Dimensions for Women**
4807 Germantown Ave.
- **Brosius’ Home**

UPCOMING INSTALLATIONS:

- **Wyck Historic House and Garden**
6026 Germantown Ave.
- **Northern Home for Children**
5301 Ridge Ave.

and Brosius’ work often included on-site visits to schools and camps.

One such place was Tree House Books, an after-school meeting spot, bookstore and tutoring center for children in North Philadelphia. Tree House’s mission is to create a community of thinkers in a neighborhood in need of revitalization—the trash-filled vacant lots behind the center were perfect for last summer’s “Make Your Space Beautiful” program. The six-week camp invited children to assist in transforming the 20-by-65-foot lot directly behind the center into a garden filled with orange and green raised beds, pastel watering cans, hanging planters and mural-splattered rain barrels. Upon visiting the garden, Brosius began to imagine how he could assist Tree House in expanding its program in size and season. This year’s camp, which began on July 5, is a joint effort between Tree House and Chipping Hill called the “Canvas & Plate Institute.”

“The kids know we have a garden. They’ve been in it at least half of a school year now. So, the next steps are, ‘What can we do with this garden?’ and ‘How can we flourish from that?’” explains Lauren Macaluso, volunteer coordinator at Tree House Books.

The program will empower campers, ages 7 to 16, to use what they grow in the garden for culinary and artistic projects. They’ll work with volunteer chefs from Marigold Kitchen and the Art Institute to create dishes, paint a garden-influenced mural, and tour farmers markets and public art installations. But before learning to use their garden bounty, the students must become experts at growing it.



“That’s why it works for us to work with Howard,” says Macaluso, “because having a garden that grows vegetables and fruits is the first step in having the kids realize they can be self-nourishers, like they can actually grow these things and feed themselves.”

Chipping Hill’s teaching technique is part instant gratification, part agricultural education and implementation. Each micro farm installation features two boxes; in Tree House’s case, one large and one small. One is filled with pre-grown crops produced by George Didden Greenhouses Inc., a commercial grower in Hatfield, Pa. The second box serves as an incubator of the students’ growing pursuits. Lettuces, Swiss chard, arugula, carrots, beets, tomatoes and fresh herbs are started either indoors, or in outdoor pots, then transplanted into the micro farm once seeds reach germination. Along the way, lessons on “gardens’ companions, bullies in the garden, garden planning and elementary botany” supplement the hands-on experience.

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was 6, milked cows, came home and did the same thing all summer from dawn to dusk on tractors or hay wagons,” remembers Brosius. “That’s missing in all these children’s educations, and I’m just trying to supply some of that.”

In order to build more micro farms and run his program, Brosius must rely on grants from philanthropic foundations. This March, Chipping Hill was awarded nonprofit status with the help of Skip Weiner, executive director of Urban Tree Connection (UTC), a fellow nonprofit and pioneer in transforming vacant properties into flourishing gardens. Upon receiving its first grant as a nonprofit, Chipping Hill used the funds to construct a micro farm installation for UTC’s 52nd Street and Wyalusing Avenue farm. Since then, Brosius has raised a total of \$37,000: enough for the six installations he has completed, and two that are currently in the construction phase. His goal is 50 installations by the end of this year—a few of which may find their way into the four remaining vacant lots behind Tree House Books.

“If we had micro farms running in rows, we could have four or five rows of them,” imagines Brosius. “We could also put a little building up here and have a little farmers market because we can grow all year long. Nobody has fresh vegetables in the wintertime unless they’re coming from Salinas, Calif. But nobody has fresh. This project has big legs.”

For more information on Chipping Hill Micro Farms, visit chippinghillmicrofarms.org. For more on Tree House Books, visit treehousebooks.org