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In Depth

Vegetables on Board

New York's newest greenhouse is eco-friendly—and it floats.
By Justin Nobel



Giles Ashford



Barges are a common sight on New York City's Hudson River, but there's only one that's equipped to grow a salad: the [Science Barge](#). Solar panels, windmills, and a biodiesel generator power its greenhouse, which produces a variety of fresh vegetables.

The vessel is the first project of New York Sun Works, an environmental nonprofit founded in 2004 that promotes obtaining energy, water, and food without polluting the environment or burning fossil fuels.

"I believe that human ecosystems and natural ecosystems can survive together," says founder Ted Caplow. "It's not just the planet or just us; it's how we do it together."

The floating education center team wants to do more than merely invite people onboard to admire the sustainable technology—they aim to offer city dwellers an up-close look at how vegetables are grown, and to inspire city officials to realize that urban centers can be significant sources of food production.

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Merle Jensen, an expert from the University of Arizona on growing food hydroponically (without soil) and a member of the barge advisory board, says he's noticed that few people are aware of where the food they eat actually comes from.

"A lot of people think you just go down to Safeway or Albertsons to get food," says Jensen, "they really don't understand the biology behind it."

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One visit to the 130-foot-long barge can rectify that disconnect. Tomatoes, cucumbers, and bell peppers sit in a mixture of rice hulls and coconut husks, both agricultural waste products, and extend vertically along strings hung from the greenhouse’s ceiling. Herbs like basil and cilantro grow in crushed bits of rock and clay from stacked bins called “Verti-Gro” towers. Heads of lettuce, planted in rock that has been spun into cotton candy-like fibers, grow in elevated trays that display their roots.

Rainwater collected from the greenhouse’s roof, as well as desalinated river water, irrigates plants, and vents on the side of the greenhouse help reduce the need for electricity. Rather than using toxic pesticides to eliminate pests, barge staff members rely on beneficial insects such as ladybugs and parasitic wasps. And though they apply fertilizers to give plants nutrients like nitrogen and potassium, the system collects the runoff and the fertilizers are reused.

Greenhouse operations are electronically coordinated from a control room in a lime green shipping container donated by the New York Container Terminal. A combination of wind and solar power and a biodiesel generator, which can run on used cooking oil from restaurants, powers the system.

One New York restaurant, Coogan’s, in Washington Heights, has even arranged to purchase barge greens for use in a “barge salad.”

Though New Yorkers will have to wait a while yet for that tasty treat, they’ll be able to visit the Science Barge when it opens to the public this Friday. A dozen freshmen from Manhattan’s High School for Environmental Studies recently got a sneak peek at the vessel. On a windy April day, students tried their hand at planting basil in different substrates and listened to a brief lecture on hydroponics from Jennifer Nelkin, the barge’s greenhouse director and education coordinator.

When a teacher asked the class who wanted to take their basil plants back to school with them most students raised their hands. Angelica Guerrero, 14, was one of them.

“I think it’s really cool,” she said of the barge, “it’s another way to save energy.”

Scientists like Jensen also value the exciting learning opportunity that the barge provides students.

“We’re just trying to take science and make it dance,” he said, “make it so kids can grab it and say, ‘I wanna be on this team!’”

Public tours of the barge are available on the weekends but weekdays are reserved for student groups. The Science Barge will be docked for two months at Hudson River Park’s Pier 84 in Midtown, Manhattan, before moving to several other locations around New York City and closing for the season at the end of October.



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Have your group thought about how the science barge might be propagated into a larger scale along ports for growing specific crops?

Posted by:Greg L. Brown | [May 4, 2007 2:58 AM](#)

It is truly a fantastic idea. I worked for a long time with Science Barge Hydroponics creator Jenn Nelkin. She is a master at what she does and it reflects in the vision of the Science Barge.

I was in attendace at the opening of the barge on Friday. There was standing room only for the opening presentation which included a nice talk by John Todd, one of the visionaries of these type of projects.

Kudos to everyone involved on this project. It is truly a masterpiece in sustainable agriculture whos time has arrived.

Posted by:Greg Peterson, The Urban Farm | [May 6, 2007 1:32 PM](#)

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