

***productive architecture***

Project Portfolio 2010



**Kiss +  
Cathcart,  
Architects**

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## *manhattan school for children greenhouse*

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The Manhattan School for Children - PS 333 - has built the Sun Works Center - a rooftop environmental education greenhouse on the Upper West Side.

A group of parents and educators discovered that environmental science education is lacking within the NYC public school system, and that many schools have vacant roof-tops which could serve as ideal spaces for hands-on learning facilities. With New York Sunworks they founded The Greenhouse Project, an initiative to construct environmental science laboratories on the rooftops of 100 NYC public schools. This is their pilot project.

The program for the 1600 sf greenhouse includes sustainable food production systems with differentiated planting zones for individual and grade projects, a composting center, insect growing areas, a weather station and a classroom. A rainwater collection system harvests water for use in the greenhouse. The greenhouse will produce 8000 lbs of produce annually using hydroponic growing systems, aquaculture, a vertical farming system and some soil based beds.

Energy requirements of the greenhouse have been minimized by good air sealing, a retractable heat blanket and a twinwall polycarbonate roof. Set back temperatures at night and weekends reduce energy demands. Heating is provided by an electrical heat pump with the condenser unit in the main building to make use of the stored heat within.

Kiss and Cathcart worked closely with the School Construction Authority and the DOE's Division of School

Facilities to ensure that their standards were met. The project also required approval from the State Historic Preservation Office and NYC's Department of Buildings, where K+C had to work through unique code interpretation challenges. We needed to go to NY State DOE to revise their energy code to include a specific interpretation for agricultural and educational greenhouses pioneering the way for urban agricultural movement.

The SCA have said that this project has been one of the smoothest, fastest projects built on a NYC public school with private funding.

**The Client:**

Friends of Manhattan School for Children

**The Team:**

Kiss + Cathcart, Architects

New York Sunworks

Robert Silman Associates, Structural Engineers

Goldman Copeland Associates, MEP Engineers

**Project Details:**

\$ 550,000

1,600 sf

Completed 2010





