

## **My 12,000 sq.ft Linda Tool Green Roof in Red Hook**

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Paul S. Mankiewicz, Director of the Gaia Institute, received his Ph.D. from the City University of New York/New York Botanical Garden Joint Program in Plant Sciences. He began work incorporating ecological restoration for storm water capture along the Bronx River and across New York City in 1985 and restoring tidal wetlands around the Pelham Bay Landfill in 1993. Dr. Mankiewicz holds patents on a biogeochemical reactor wetland treatment system that breaks down dioxins and PCBs, on an ultra-lightweight plant growth media for green roofs, and on a modular, in-vessel composting system, among others. Past president of the Torrey Botanical Society, cofounder of the Urban Soils Institute, chair of the NYC Soil & Water Conservation District, and former chair of the Bronx Solid Waste Advisory Board, he has designed and built natural landscapes to remove and sequester metals, hydrocarbons and excess nutrients from runoff and wastewater, capture carbon, increase biodiversity, and lower air conditioning and heating costs. Beginning in 2002, Dr. Mankiewicz began work on the first community garden constructed as a storm water capture park. El Jardin del Paraiso on E 4<sup>th</sup> St. on the Lower East Side was built with a biogeochemical cap to protect park users and gardeners from the legacy concentrations of lead in the soil and support native plant communities. Beginning in 2004, the first green roofs in the Bronx were installed at St. Simon Stock Convent and grammar school followed by the first industrial-scale stormwater treatment meadow and green wall at Sims Recycling- a zero discharge ecologically based storm water capture system on the six acre truck-to-barge material handling facility on the Bronx River, - a site that captured the runoff from hurricane's Irene and Sandy, each 100 year storms. In 2009, the Gaia Institute designed and installed the first process water/greywater treatment green roof on the Linda Tool Corporation in Red Hook, Brooklyn, and in 2010 put in the first twelve of Mayor Bloomberg's PlaNYC 2030 enhanced tree pits for street-side storm water capture. This past year, the first green roof over blue roof was put in place on the 22,000 sq.ft. Falk Recreation Facility at Einstein Medical College in the Bronx, covered with native saltmarsh vegetation irrigated with repurposed back-wash from the swimming pool filter.