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The New York Times

With Flyovers, a Solar Map of New York

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BY MIREYA NAVARRO

While most residents were sleeping, a twin-engine Shrike Commander flew serial missions over the city recently, cruising low like Superman and back and forth like a lawn mower. Equipped with a laser system, the plane collected highly precise images of the city, its rooftops, trees, wetlands and much of what lies in between.

The early morning flyovers are expected to yield the most detailed three-dimensional picture of New York City to date, with an emphasis on structures, elevations, sun and shade, and nooks and crannies relevant to the city's emergency response system and its environmental goals.

The data will be used, among other things, to create up-to-date maps of the areas most prone to flooding, the buildings best suited for the installation of solar power and the neighborhoods most in need of trees. An advisory panel of experts formed by the mayor has warned that the city must prepare for more rain and an increased risk of coastal flooding in the coming decades as a result of global climate change.

Rohit T. Aggarwala, the director of the city's Office of Long-Term Planning and Sustainability, said the effort would result in a picture of New York's physical space "in far more detail than what we had before." The effort, which will cost about \$450,000, is part of Mayor Michael R. Bloomberg's broader environmental agenda, known as PlaNYC.

The current flood plain maps used by the Federal Emergency Management Agency date to the 1980s and were based on aerial photography and ground surveys. The maps are not as accurate or precise as they should be for the density of the city, Mr. Aggarwala said, and the new data could lead to zoning changes and stricter building codes, among other adjustments.

But the information, collected with a laser technology known as Lidar (for light detection and ranging), will also answer questions like whether any wetlands still exist in the city and how many flat roofs and pitched roofs there are, according to city officials. The rooftop count can then be used to create an online "solar map" that will help assess the city's capacity for solar power and even allow New Yorkers to check if the buildings they work or live in are suitable for solar panels.



Fred R. Conrad/The New York Times

"The purpose is to try to give people the tools they need to understand how to adapt solar technology," said Tria Case, director of sustainability for the City University of New York, which has partnered with the city to develop the solar map. "With the Lidar data, we'll estimate the solar potential for every building in the city."

The project is financed in part with \$205,470 from the federal Energy Department.

Cities like San Francisco have already developed solar maps, and the new Lidar technology is increasingly being adopted by coastal regions around the nation, FEMA officials said. The laser system captures images of surface terrain and structures by shooting out laser pulses from an aircraft and measuring the time it takes the pulses to bounce back, producing representations of what it hits.

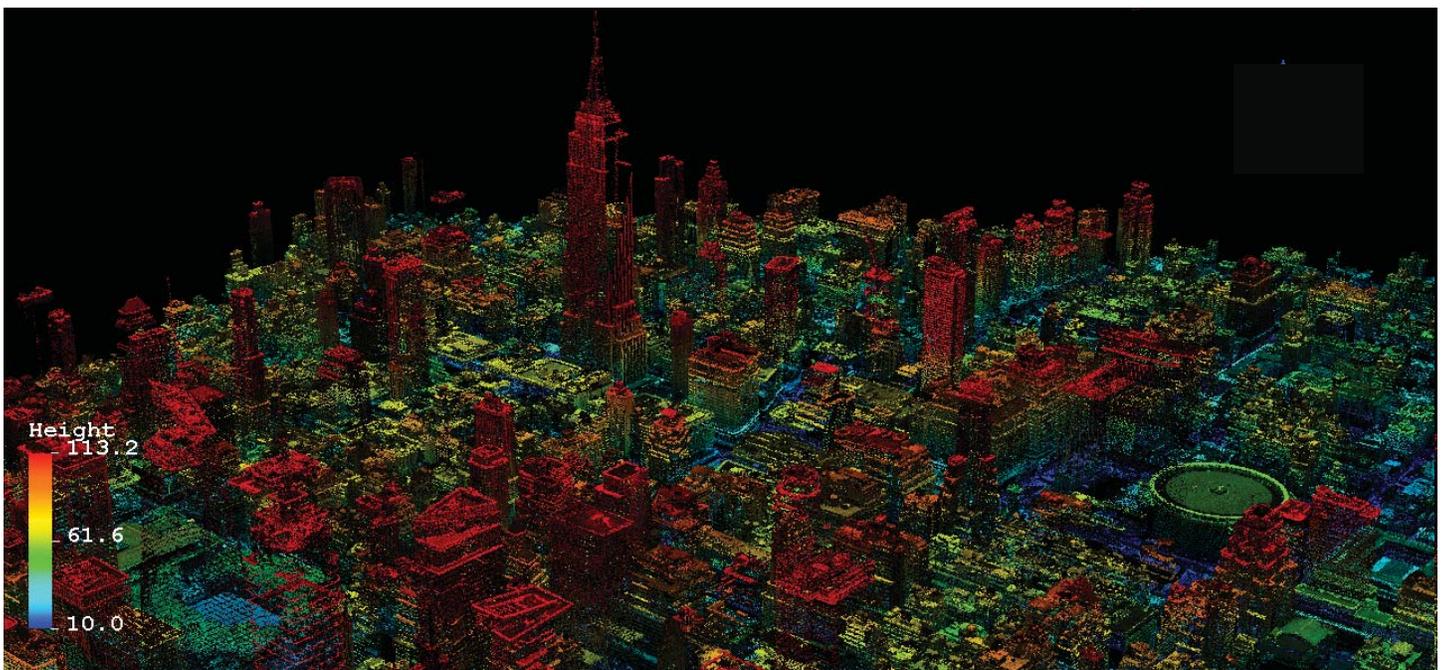
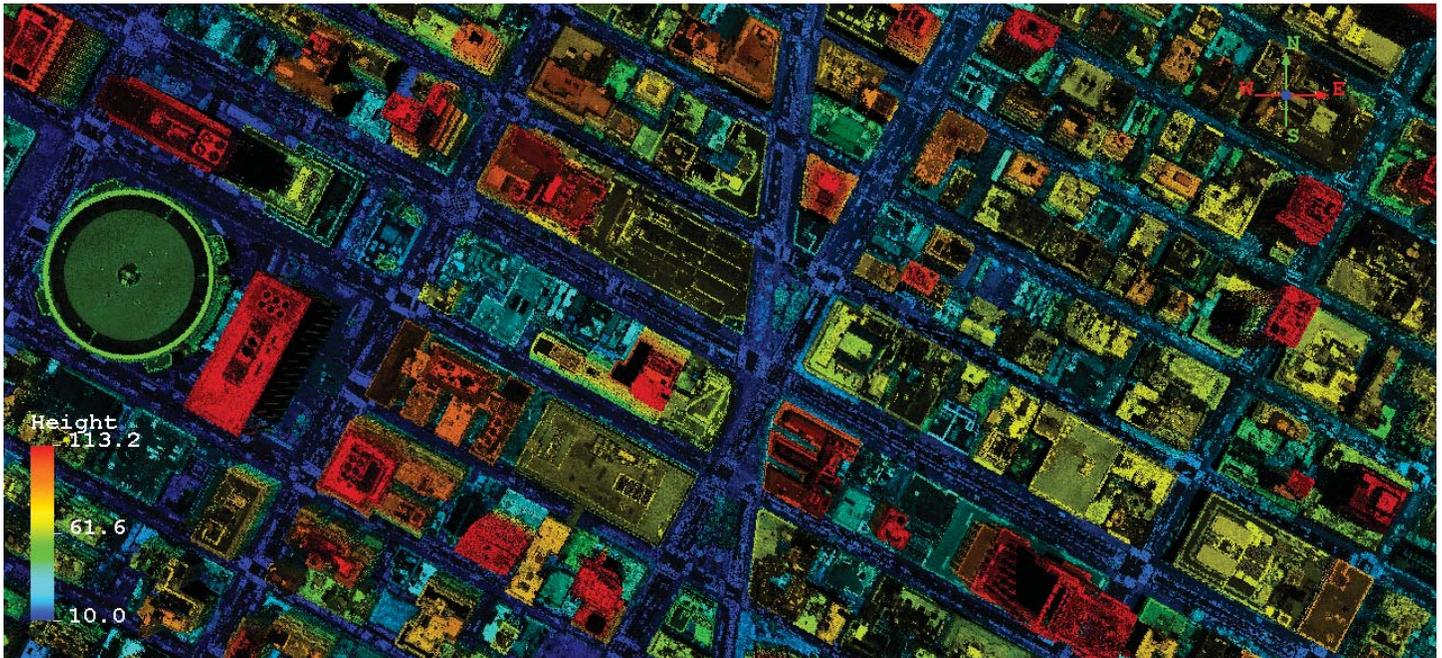
The aircraft, with a pilot and laser sensor operator for its crew, scanned the urban canyons of the city at about 3,500 feet in nine six-hour, post-midnight flights from April 14 to April 30, said a spokesman for Sanborn, the Colorado-based mapping firm hired for the task. The collected data is expected to be analyzed in the next several months, producing solar and flood maps by the end of the year.

Mr. Aggarwala said the end product would be similar to "The Panorama," the 9,335-square-foot architectural model of the city at the Queens Museum of Art. Built by Robert Moses for the 1964 World's Fair, it relied on aerial photography and other materials to depict the city's topography and structures, including bridges and nearly 900,000 buildings.

"It's going to be that," Mr. Aggarwala said, "but more accurate and digital."

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Top and Above: Sanborn LiDAR Data provided for Solar Mapping of the City of New York.

Additional Information

For more information about Solar Mapping and how it may be able to benefit your community, contact customer service at 1.866.SANBORN or e-mail information@sanbornonline.com.

About Sanborn

With a rich tradition of mapping dating back to 1866, Sanborn provides comprehensive end-to-end geospatial solutions. Sanborn offers products and services that satisfy diverse and evolving customer needs for GIS software systems, application development, systems integration, and spatial analysis and modeling. Leveraging precision remote sensing techniques, Sanborn also supports a wide range of applications and users. Sanborn's solutions are founded on a strong legacy of innovative geospatial data collection and processing capabilities. An internationally recognized company, Sanborn has multiple U.S. offices with customers worldwide. For more information, visit www.sanborn.com.