

Progress Towards Site Visits by Situated Visualization

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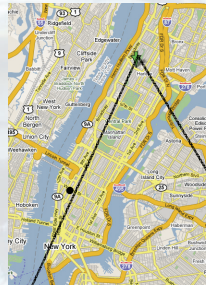
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www.cs.columbia.edu/graphics/projects/svxs/v/

Site Visits

Much like ethnographic study in Human Computer Interaction, site visits expose urban designers and architects to a physical site as they begin a design activity. Current tools for understanding a site, such as photographs and maps are not sufficient to perceive and understand invisible or intangible aspects of the site in situ.



The Site: Manhattanville

Our research activities focus on a 17-acre portion of the industrial zone of New York City known as Manhattanville, where rezoning efforts are raising questions over land use, economic development, socio-cultural diversity and environmental stewardship.

Situated Visualization

Our contribution is our focus on new tools for site visits and novel techniques for situated visualization. We use the term *situated visualization* to describe a visualization that is related to and displayed in its environment; for example, a display of carbon monoxide data directly overlaid on the user's view of the physical locations in which it was sampled.



Geocoded carbon monoxide data (ppm is mapped to altitude)

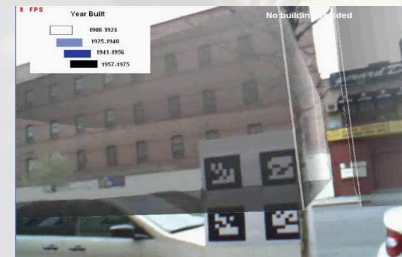
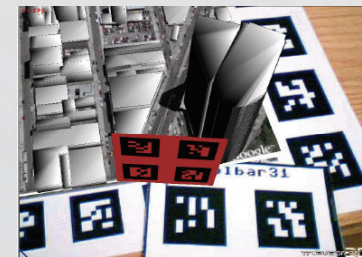
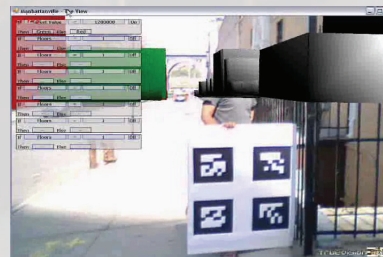
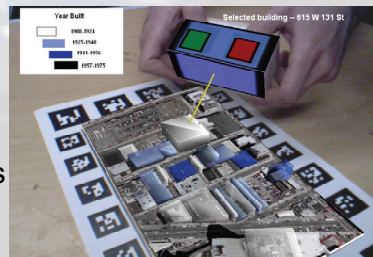
Platform

We provided students with a platform built on top of an existing 3D engine. The engine is extended with augmented reality capabilities, including live video capture, 6DOF optical marker tracking, and the ability to combine live video with 3D graphics.



3D User Interface Class

As part of our investigation, the team final project in a class on 3D user interface design asked students to explore different scales of user interface and interaction in the urban environment.



Images courtesy of Varun Maithel, Armando Ramirez, Michael Wasserman, and William Yin, Mike Sorvillo, Levi Lister, Taran Singh, and Sasha Stoeva