

GEOGRAPHICAL FIELD NOTE

RE-CREATING THE HISTORICAL TOPOGRAPHY OF MANHATTAN ISLAND*

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During the nineteenth century the Island of Manhattan was transformed into a physical representation, or “material replication,” of the Cartesian coordinate system through development of the grid street plan. The original grid plan, the Commissioners’ Plan of 1811, consisted principally of a rectilinear matrix of 12 major avenues and 155 cross streets (Randel 1811).¹ All streets and avenues were numbered in consecutive order, thereby announcing to the world that the Manhattan landscape—with its hills, wetlands, streams, farmlands, and estates—was to be converted into a life-size Cartesian coordinate system.²

Before the plan was implemented, the Common Council hired John Randel Jr. to survey Manhattan Island.³ The most detailed cartographic products of his surveys, the Randel Farm Maps (Randel 1819–1820), are currently held at the Manhattan Borough President’s Office, and Randel’s Field Books can be found at the New-York Historical Society (Randel 1812–1822). The Randel Farm Maps offer a unique snapshot of various socioenvironmental characteristics of the Manhattan landscape before the “armies of street openers” (Smith 1938, 127) leveled much of the island to make way for the grid. These maps depict the pre-grid landscape circa 1819 as well as the then-imaginary streets and avenues of the proposed grid plan. The surveying process that led to the production of the Randel Farm Maps was an integral component of the project to rationalize the landscape, so it is ironic that the same quantitative techniques that facilitated the “obliteration” of the pre-grid landscape offer the means by which to construct a three-dimensional digital model of pre-grid Manhattan topography.

RANDEL’S ELEVATION DATA

As a master’s student in the Department of Geography at Pennsylvania State University during the fall of 2000, I became interested in the environmental history of New York City. Existing environmental histories of the city tend to focus on Central

* Research was supported by the Environmental Protection Agency’s Science to Achieve Results (STAR) Graduate Fellowship. I would like to thank Port Authority facility surveyor Scott Zelenak for offering suggestions on determining the elevation datum of the Randel Farm Maps. I would also like to thank my advisor, James McCarthy, as well as David O’Sullivan, for providing useful suggestions on earlier drafts of this note. In addition, I appreciate the comments of various anonymous reviewers from the GIS community. I am also grateful to former consulting engineer Eric Cardwell and policy analyst Laura Engler, at the Manhattan Borough President’s Office, for providing me with access to the Randel Farm Maps. Lastly, I would like to acknowledge my former advisor, Andrew Sluyter, for guiding me through the initial stages of this research project.

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