

# Spatial Synthesis

## Volume II, Book 2: Making It Clear: The Importance of Transparency

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Volume I of the *Spatial Synthesis*\* series focuses on theory;  
Volume II\* of the series focuses on applications, turning theory into practice.

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These chapters use subtle effects and reflect the importance of transparency in making concepts become clear.

### INTRODUCTION

Graphics created on the computer often employ subtle capabilities that did not really exist in a paper and pen environment. Thus, "white" becomes a color to be used in the same way as red or green. "Transparent" also becomes a color by which to uncover parts of other images. Two dimensional maps composed of layers in Geographic Information Systems software may look through one layer to see part of another. Images created in Adobe Photoshop can be assigned partially opaque colors to let still others show through. The world of three-dimensional models suggests a host of opportunity for making things "clear." The emphasis in this second book in Volume II of the *Spatial Synthesis* is on the importance of transparency.

A visual annotated bibliography of previous related applications appears below. In the figure, click on an image (including the Earth at night) to go to related links. Author names appear on linked materials. These images link to electronic materials internal to the Institute of Mathematical Geography (IMaGe). Individual articles contain links to citations to a variety of materials. A poster based on this image was presented at the first "Scientific Applications with Google Earth Conference," October 22-23, 2008, at The University of Michigan, Ann Arbor. ([Link](#) to full-sized poster presented by the author.)

### **POPULATION-ENVIRONMENT DYNAMICS: A GOOGLE EARTH APPROACH**

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**BEFORE GOOGLE EARTH...**

**MUNICIPAL APPLICATIONS:**

**PLANNING, ZONING, AND EMERGENCY MANAGEMENT**

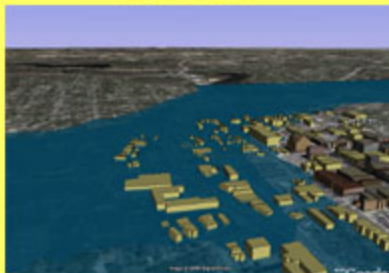
**ARCHIMEDES IN ANN ARBOR:**



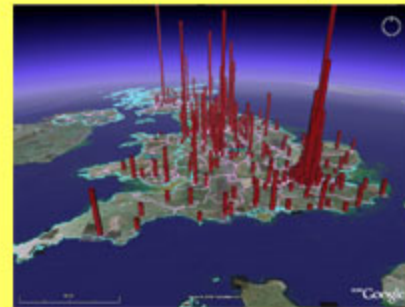
# THEN CAME GOOGLE EARTH...

A HOST OF BUILDINGS (OVER 400) WAS CREATED, TOWN AND GOWN--TEXTURED AND UNTEXTURED, AND FROM THAT WORK, 2006 FORWARD, FLOWED OTHER APPLICATIONS...

Allen Creek



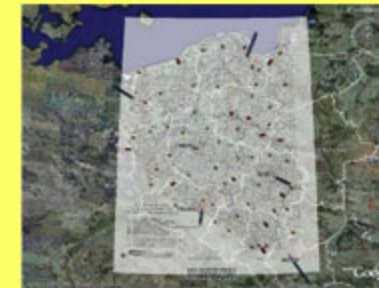
The Skyline as Barchart: The Vertical City--Urban Change over Time.



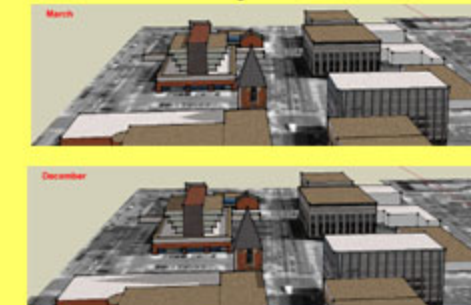
Banda Aceh, Piling up of Tsunami Waters



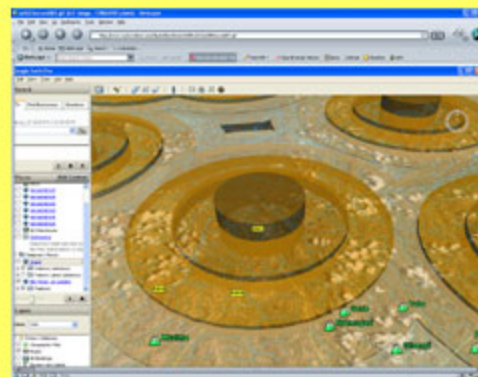
Classical Central Place Theory



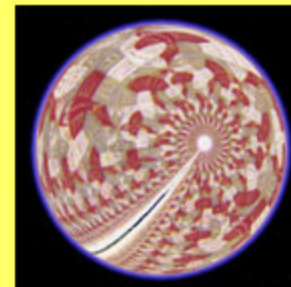
A Study in Shadows



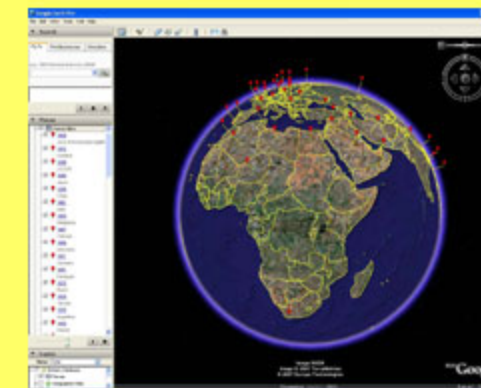
Burundi Buffers: DevInfo Data to Google Earth



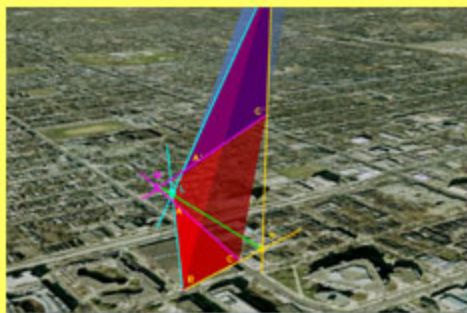
Google, Escher, and...?



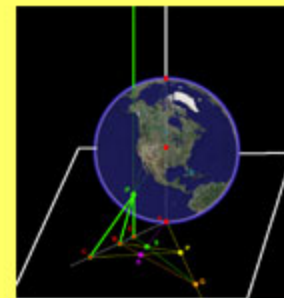
Tracking the spread of possible honeybee extinction



Desargues's Two Triangle Theorem



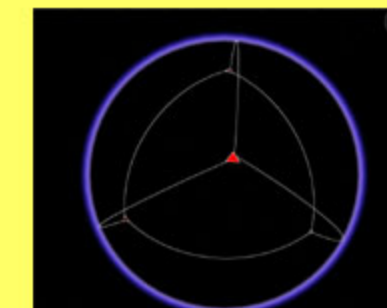
Harmonic Map Projection Theorem



Neighborhood Watch



The Transparent Google Globe: The Next Frontier? Tetrahedron in the Google Globe



## Selected References:

Solstice: An Electronic Journal of Geography and Mathematics  
<http://www.imagenet.org/>

Spatial Synthesis eBooks: <http://www.imagenet.org/>

3D Atlas of Ann Arbor series: <http://www.imagenet.org/>

Lists of various other contributors can be found in associated books and articles found at the url above. In addition, all those works are also archived in Deep Blue:  
<http://deepblue.lib.umich.edu/handle/2027.42/58219>

"Archimedes" is the pseudonym of Arlinghaus in the Google 3D Warehouse; s/he is a Featured Google Earth Modeler in the 3D Warehouse  
<http://sketchup.google.com/3dwarehouse/>

Models by "Archimedes" are also featured in "Help Model A City" and in "Cities in Development." <http://sketchup.google.com/3dwarehouse/>



## ON THE HORIZON...

Spatial Synthesis, a continuing collection of eBooks:  
<http://www.imagenet.org/>

Population-Environment Dynamics applications.

Mathematical Geography applications.

\*2005: Book. *Spatial Synthesis, Volume I: Centrality and Hierarchy, Book 1*. Arlinghaus, Sandra Lach and Arlinghaus, William Charles. June 21.

2008: Book. *Spatial Synthesis, Volume II, Book 1. Scientific, Planning, Humanitarian, and Teaching Applications, From DevInfo to Google Earth*. Arlinghaus, Sandra Lach, et al.

## Software used for analysis:

- DevInfo 5.0: <http://www.devinfo.org/>
- Adobe® PhotoShop and ImageReady
- Adobe® DreamWeaver
- ESRI:
  - ArcView® 3.2
  - ArcGIS® 9.2
    - ArcCatalog®
    - ArcMap®
- Google Earth®

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