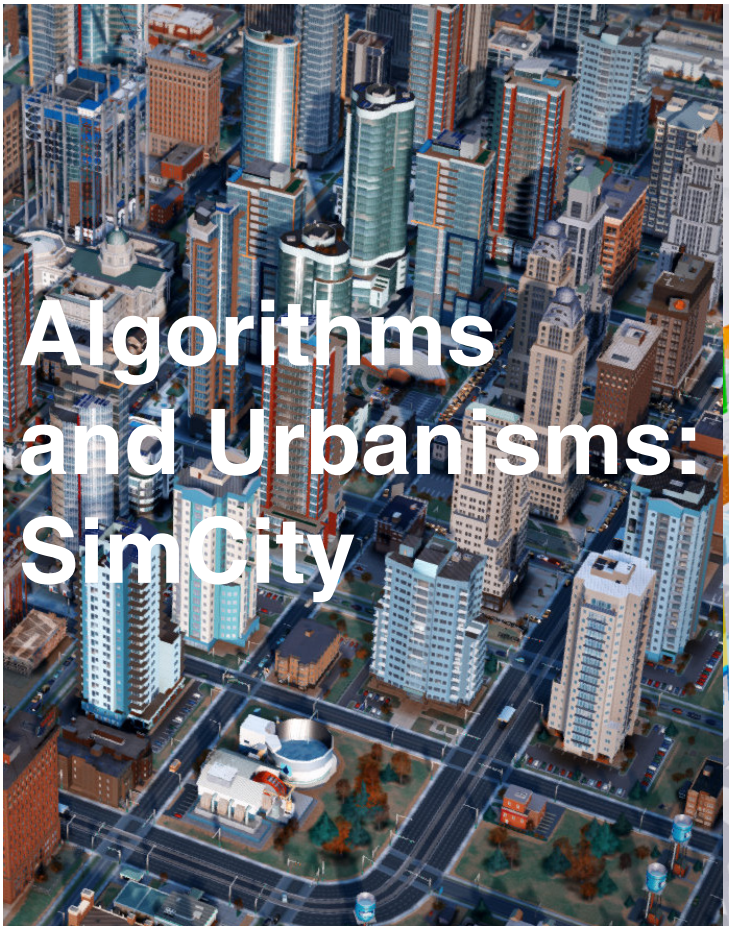
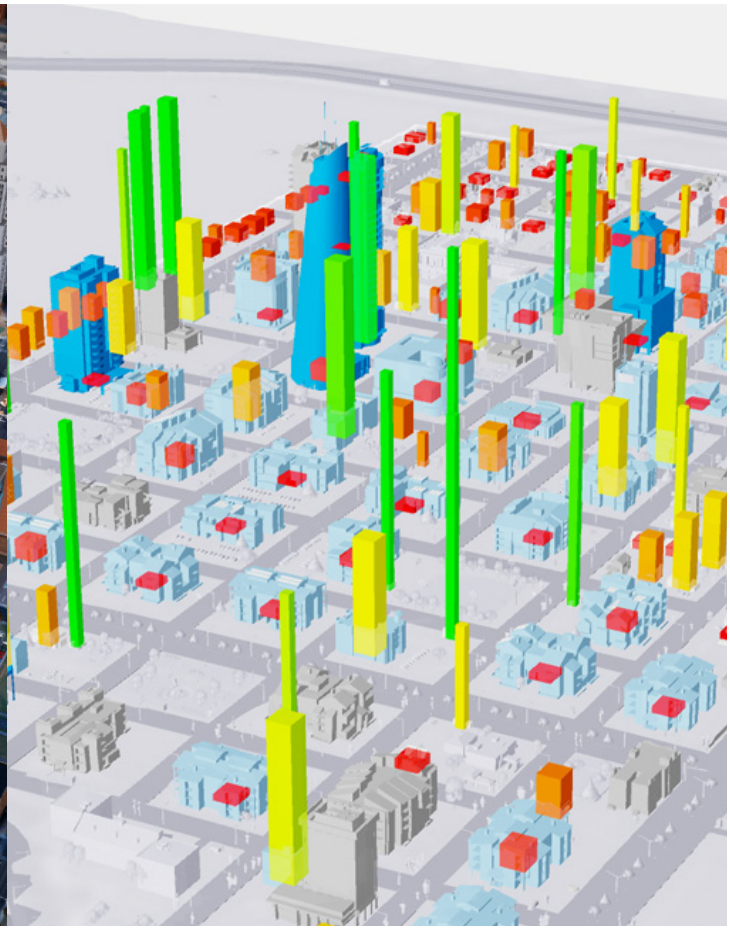


# Algorithms and Urbanisms: SimCity



**Instructor: Luc Wilson**
**Lbw2133@columbia**
**Spring 2014**
**Thursdays 6pm - 8pm**
**Room: 115 Avery**

This course will investigate the range of algorithms, metrics and benchmarks increasingly used today for tracking the performance of cities. Students will begin by using the metrics available in SimCity to evaluate historic, ideal, and contemporary cities. They will next develop additional evaluation criteria--both quantitative and qualitative--they think lacking in SimCity but critical for understanding the performance of cities. Through this process, we will discuss the underlying urban assumptions and algorithms built into SimCity and how they impact a general understanding of the design and function of cities. This course will push students to understand, hybridize and eventually develop their own urban design theories and evaluation tools through imaginative elaborations on the game SimCity.

Students will give four 10 minute presentations throughout the semester concluding with a final review with invited guest critics. In addition to the presentations, students will be expected to engage in weekly discussions.

## PART 1:
## Analysis and evaluation of established urban theories and design.

After a broad overview of the elements and structure of cities, each student will be assigned a historic or ideal city (such as 1850's Paris or Broadacre City) and a contemporary city (Hong Kong or Seaside, Florida) to research, analyze and evaluate. They will first evaluate the cities using the metrics in SimCity, establishing performative benchmarks for each city. Next, they will define additional metrics and benchmarks that do not exist in SimCity. For each new metric they will be required to develop a way of measuring it in SimCity. Crucial to this exercise will be the evaluation of the city as it develops over time in its relation to the larger region.

Cities will be grouped (3-4) by theme. Each student will give a presentation (10 min) on their city followed by a group presentation (10 min) on their assigned theme. The group presentation will act as the catalyst for a group discussion. As possible, students should use live game play or diagramed video/still capture of SimCity as the primary media for their presentation. In addition to the presentation, students will contribute to a shared library of city metrics that will be used in part 2 and 3.

Presentations on historic and ideal cities will happen first, followed by presentations on contemporary cities.


Broadacre City


York, England

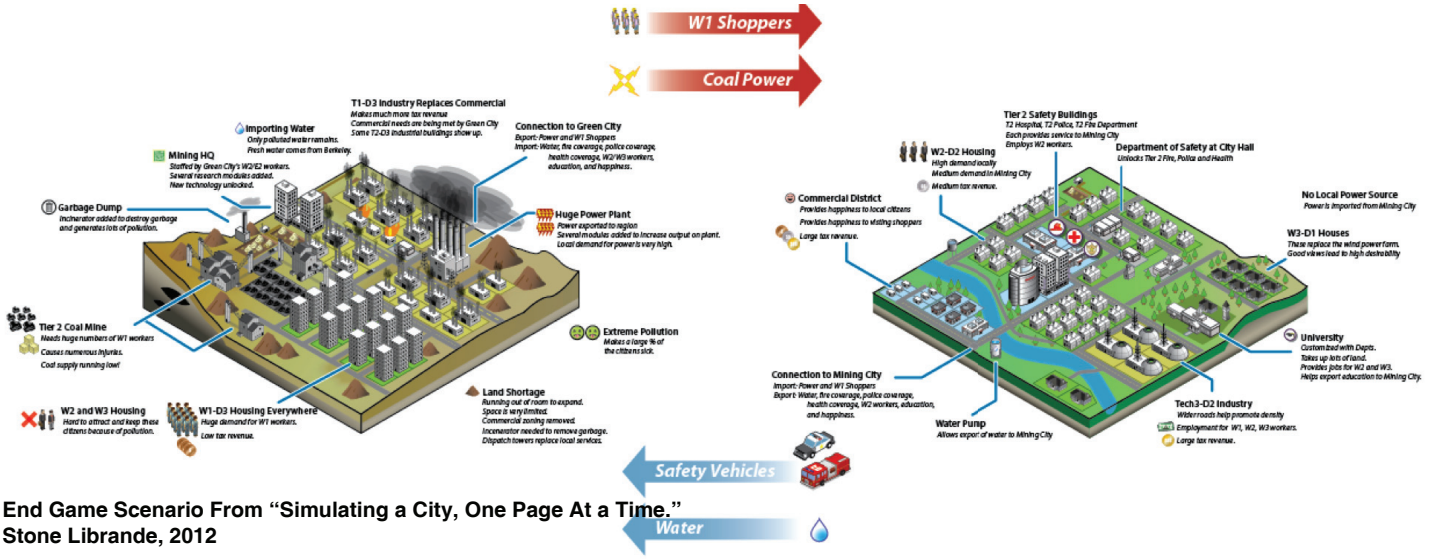

Hong Kong

## PART 2:
## Combine, Hybridize and Translate.

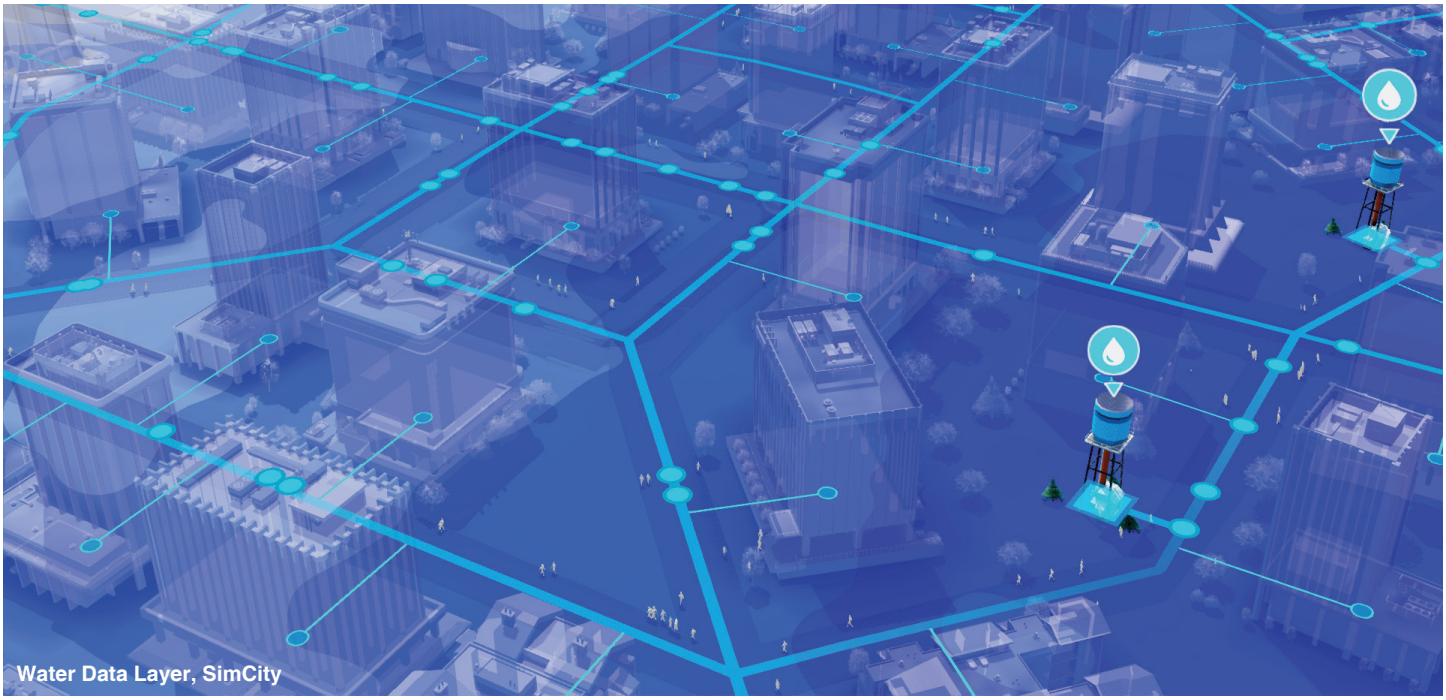
In Part 2 students will take elements from the cities and theories analyzed in part 1 and combine and hybridize them in SimCity. They can pick and choose from any city or theory studied, not just their own, using the established benchmarks as the method of hybridization.

## PART 3:
## New Urban Theories

In Part 3 students will propose and develop their own urban design theory using SimCity to iterate, test and experiment. While developing new urban theories, we will look at contemporary urban design work that uses digital visualization and evaluation techniques, such as X-Information Modeling and the working being done at the Center for Urban Science and Progress at NYU. In the end, they will propose ideal criteria and benchmarks for evaluating the performance of the city, applicable to both SimCity and real urban design.




**End Game Scenario From "Simulating a City, One Page At a Time."**
**Stone Librande, 2012**



Water Data Layer, SimCity

## Schedule

**Week 1: January 23rd**
Introduction to the course (structure, schedule, expectations) and a lecture on urban elements, organization and metrics. Historic and ideal case studies will be assigned and students will begin assignment 1. The class will conclude with a group discussion on the overall goal and focus of the course. Because this is a highly experimental course, the group discussions will be highly critical in helping to guide the structure and development of the course. Everyone will be expected to participate in the discussion.

**Week 2: January 30th**
Presentation on how to set up an urban analytical framework with a focus on metrics and benchmarking, followed by a brief history of the SimCity franchise. Next, using the assigned readings and initial gameplay we will have a discussion about the underlying assumptions in SimCity and how that will impact the city case studies. As a class, we will conclude the discussion by formalizing the framework for the case study analysis.

**Week 3: February 4th - TUESDAY**
Class this week will held on Tuesday, 6-8 in Ware lounge with SimCity lead designer Stone Librande. First student presentations on historic / ideal cities.

**Week 4: February 13th**
Historic / Ideal city presentations

**Week 5: February 20th**
Historic / Ideal city presentations

**Week 6: February 27th**
Contemporary city presentations

**Week 7: March 6th**
Contemporary city presentations

**Week 8: March 13th**
Lecture on data driven urban design. Final Contemporary city presentations

**Spring Break**

**Week 9: March 27th**
Hybrid city presentations

**Week 10:  April 3rd**
Hybrid city presentations

**Week 11: April 10th**
Final Hybrid city presentations, begin presentations of student designed ideal cities

**Week 12: April 17th**
Presentations of student designed ideal cities

**Week 13: April 24th**
Presentations of student designed ideal cities

**Final: May 8th**

## Urban Design References


- Bacon, Edmund. 1974. *Design of Cities*. New York,:Viking Press.
- Duany, Andres. 2003. *The New Civic Art: Elements of Town Planning*. New York: Rizzoli.
- Hegemann, Werner, and Elbert Peets. 1998. *The American Vitruvius: An Architect's Handbook of Civic Art*. New York: Princeton Architectural Press.
- Kostof, Spiro. 1991. *The City Shaped: Urban Patterns and Meanings Through History*. London: Thames and Hudson.
- Leinberger, Christopher B. 2008. *The Option of Urbanism: Investing in a New American Dream*. Washington, DC: Island Press.
- Rogers, Elizabeth Barlow. 2001. *Landscape Design: A Cultural and Architectural History*. New York: Harry N. Abrams.
- Work Architecture Company. 2010. *49 Cities*. New York: Storefront for Art and Architecture.


## Grading

40% Presentations (10% for each)
30% Participation in class discussions
30% Final City