Visual Simulation:

New Techniques for Modelling Geographical Distributions in Space & Time

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www.casa.ucl.ac.uk

A Warning

The movies can be downloaded and played within this pdf but this can be a hazardous task if your line is slow. Use your discretion. Each file is given with its size in MB.

This pdf will gives a flavour of the presentation without downloading any of the movies

Outline

A Little Bit of History: The Beginnings of Visual Computing

Visualisation, Interaction and Communication

Three Examples:

- Symbolic Modelling: Land Use Transportation
- Iconic Modelling: Virtual London
- Representational Modelling: Fine Scale Motion

Next Steps: Web 2.0 Simulation

A Little Bit of History: The Beginnings of Visual Computing

Whirlwind at MIT

MIT Whirlwind

close

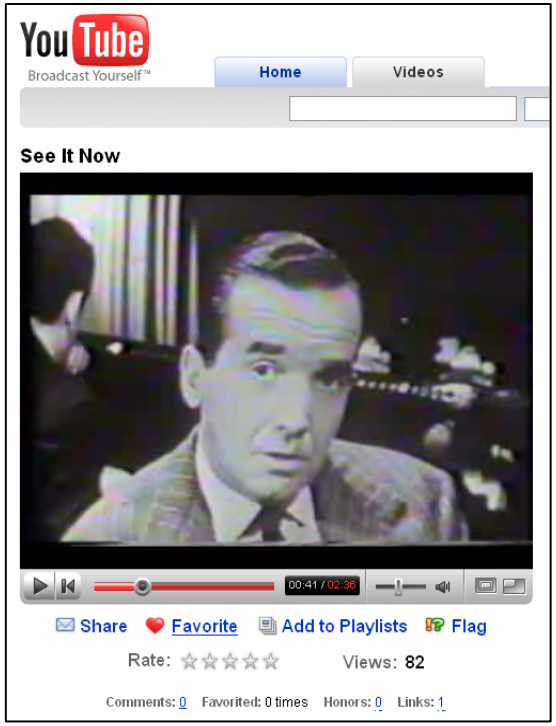
1951

- MIT´s Whirlwind debuted on Edward R. Murrow´s "See It Now" television series. Project director Jay Forrester described the computer as a "reliable operating system," running 35 hours a week at 90-percent utility using an electrostatic tube memory.

Start of 1945 project:

Completed: 1951

YouTube Broadcast Yourself™



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http://www.casa.ucl.ac.uk/barbican/movies/See-It-Now.wmv

The earliest computer movie I found in

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http://www.casa.ucl.ac.uk/barbican/movies/Kittie.wmv

Enough of History although we ignore it at our peril

Onto

Visualisation, Interaction and Communication

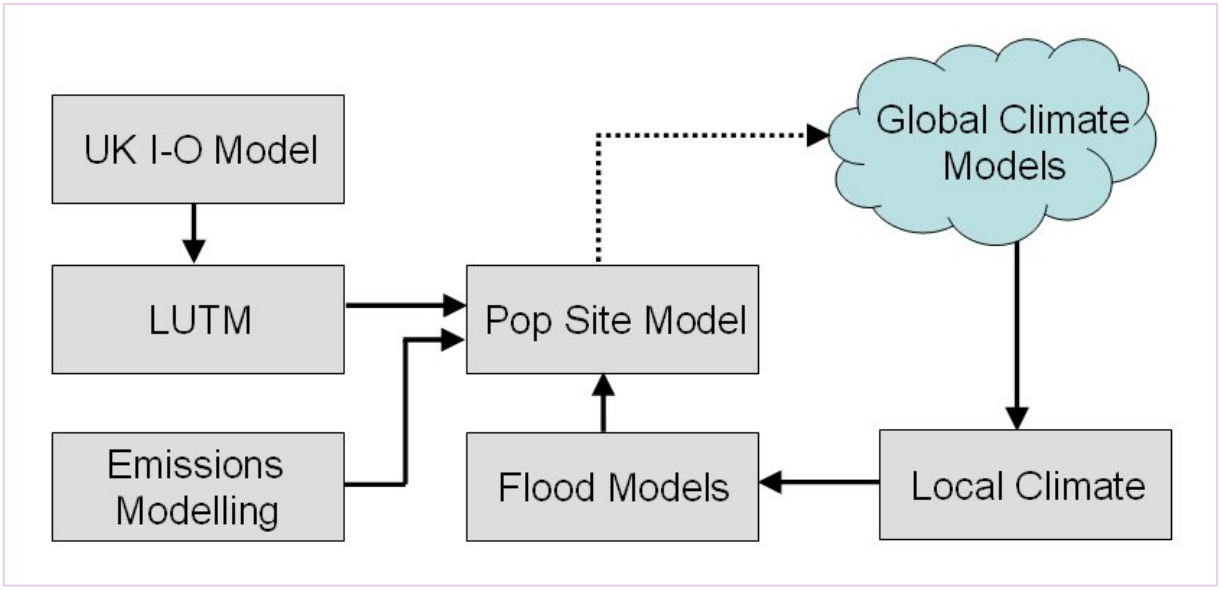
Despite the technology, the focus in computing has become

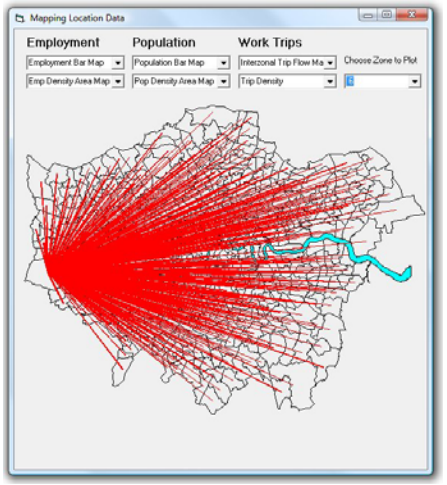
- Interactive, spontaneous, immediate.
- visual, iconic, participative.
- communicative, remote, networked ……..

My first example: how do we model the city symbolically, mathematically.

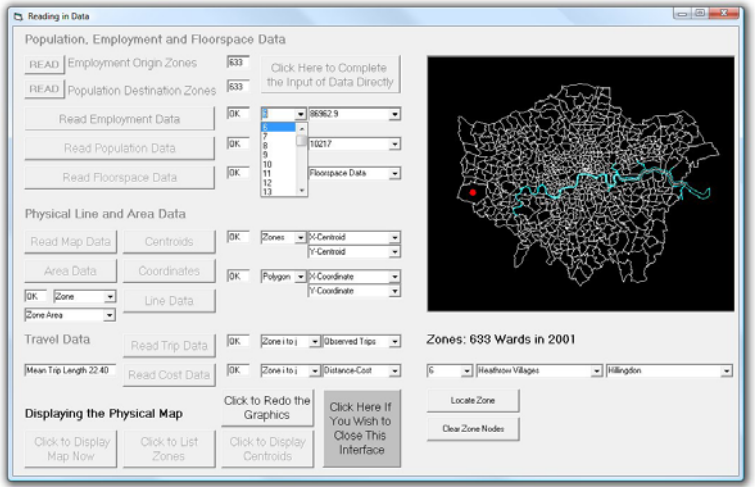
Let me explain what we are doing about simulating the impact of climate change on London as part of the Tyndall Centre's research on cities.

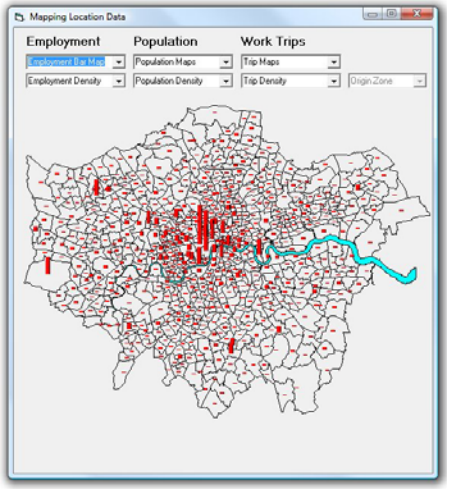
We are building a land use transport model as part of a process of integrated assessment. The key issue is that the model is interactive, immediate, visual and communicates ideas to other professionals involved in the process.

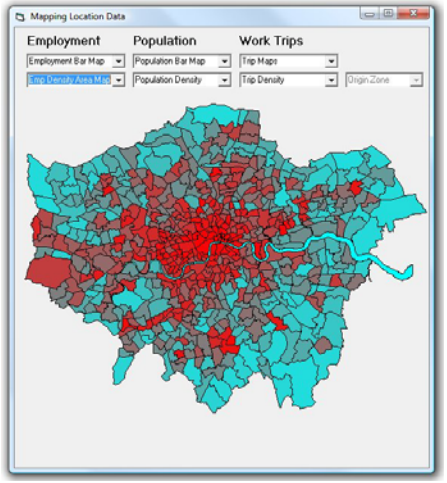

UK I-O Model
LUTM
Emissions Modelling
Pop Site Model
Flood Models
Global Climate Models
Local Climate


Mapping Location Data
Employment
Population
Work Trips

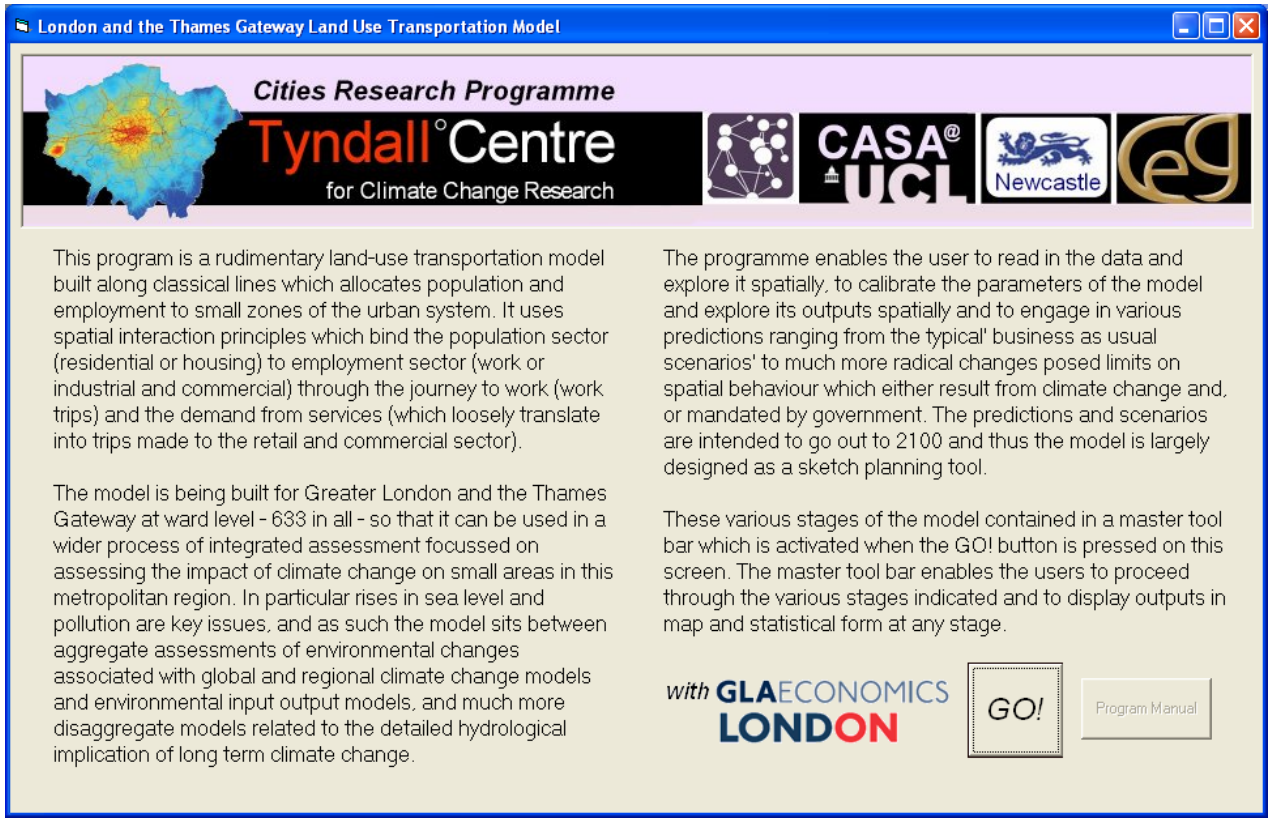

Master Tool Bar
Quit


Reading in Data
Population, Employment and Floorspace Data
Physical Line and Area Data
Travel Data
Zones: 633 Wards in 2001
Displaying the Physical Map


Mapping Location Data
Employment
Population
Work Trips


Mapping Location Data
Employment
Population
Work Trips

Let me show you how all this works. The great thing about what we are saying is we can demo it. However you can't do this in the pdf



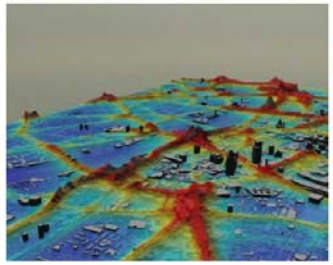
My second example: how do we model the city iconically, visually.

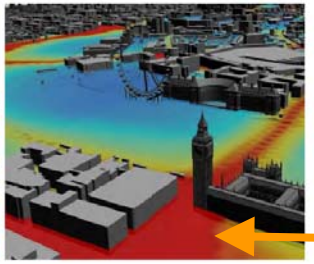
Our Virtual London model is a digital 'architects' model of the physical form of the city.

It is built in 3D-GIS, ArcGIS, ported in and out of CAD and Games software, into Google Earth, Second Life, and so on.

We use it as our test bed for multimedia. Andy will tell you about where we are going with this as it is our work horse for the GeoVUE project.

What can we do with the model, flood it, visualise land use, simulate pollution, test the impact of high buildings on the skyline ……..





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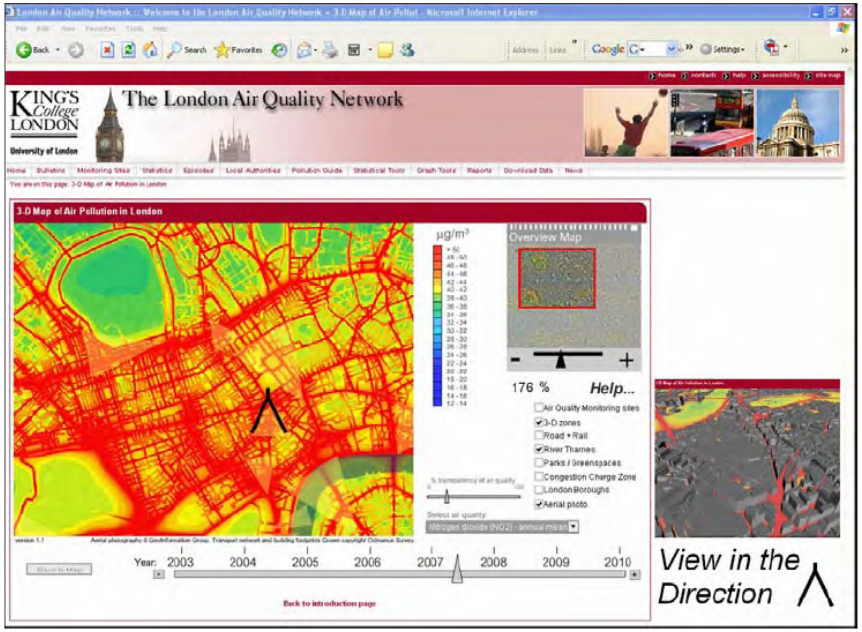
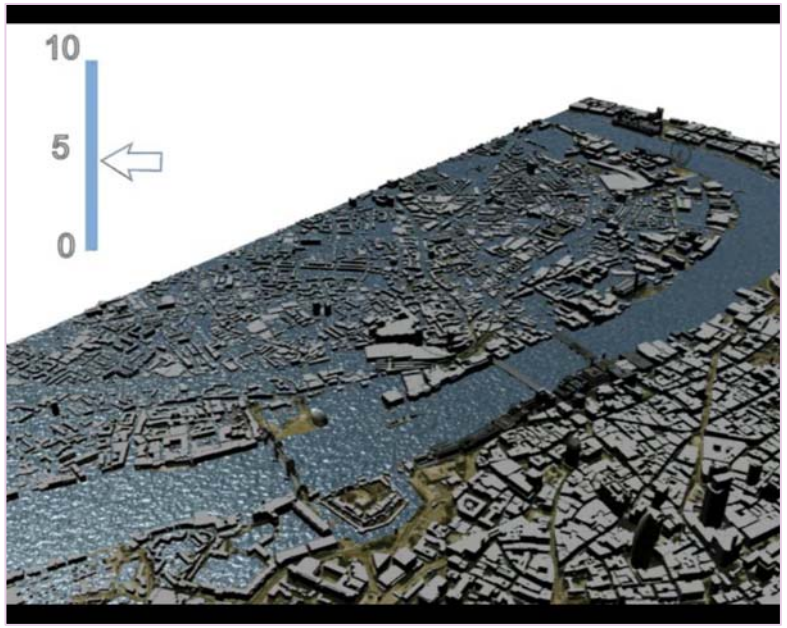
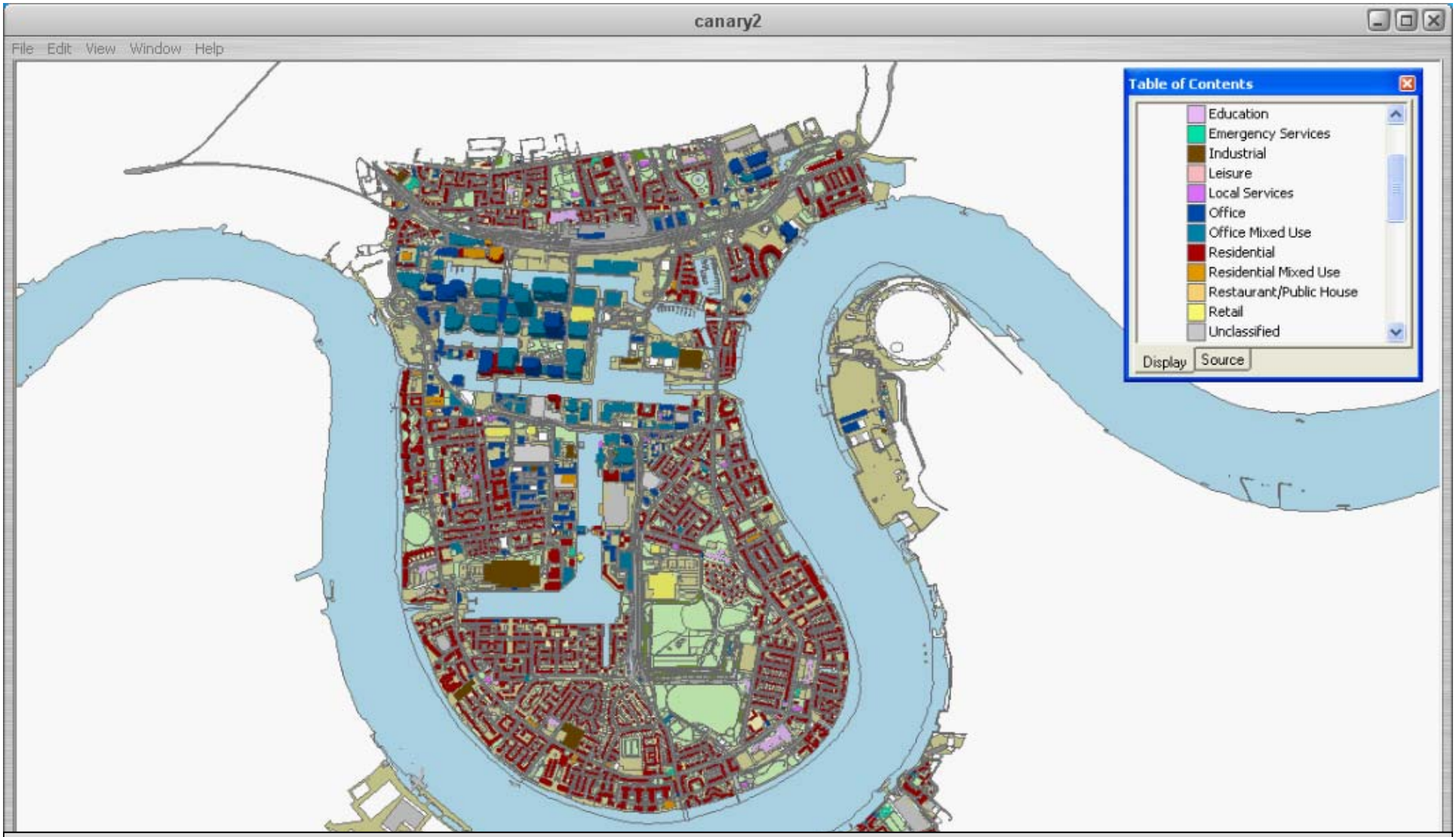
http://www.casa.ucl.ac.uk/barbican/movies/AirPollution.wmv







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http://www.casa.ucl.ac.uk/barbican/movies/Canary-Wharf.wmv

My third example: representational – how to present all of this, in Google

Our EPSRC CAPABLE project involves us in representing and modelling movements at the small scale, pedestrian movements, children walking to school, and using energy.

The project is about communicating these ideas to ourselves and to the wider constituency that is involved in these issues – walkability, obesity, safety.

But this will lead us to the next talk ……

I have backups as the network here runs slow but let me try to show you these examples from our web site, first www.casa.ucl.ac.uk

But in case I can't…

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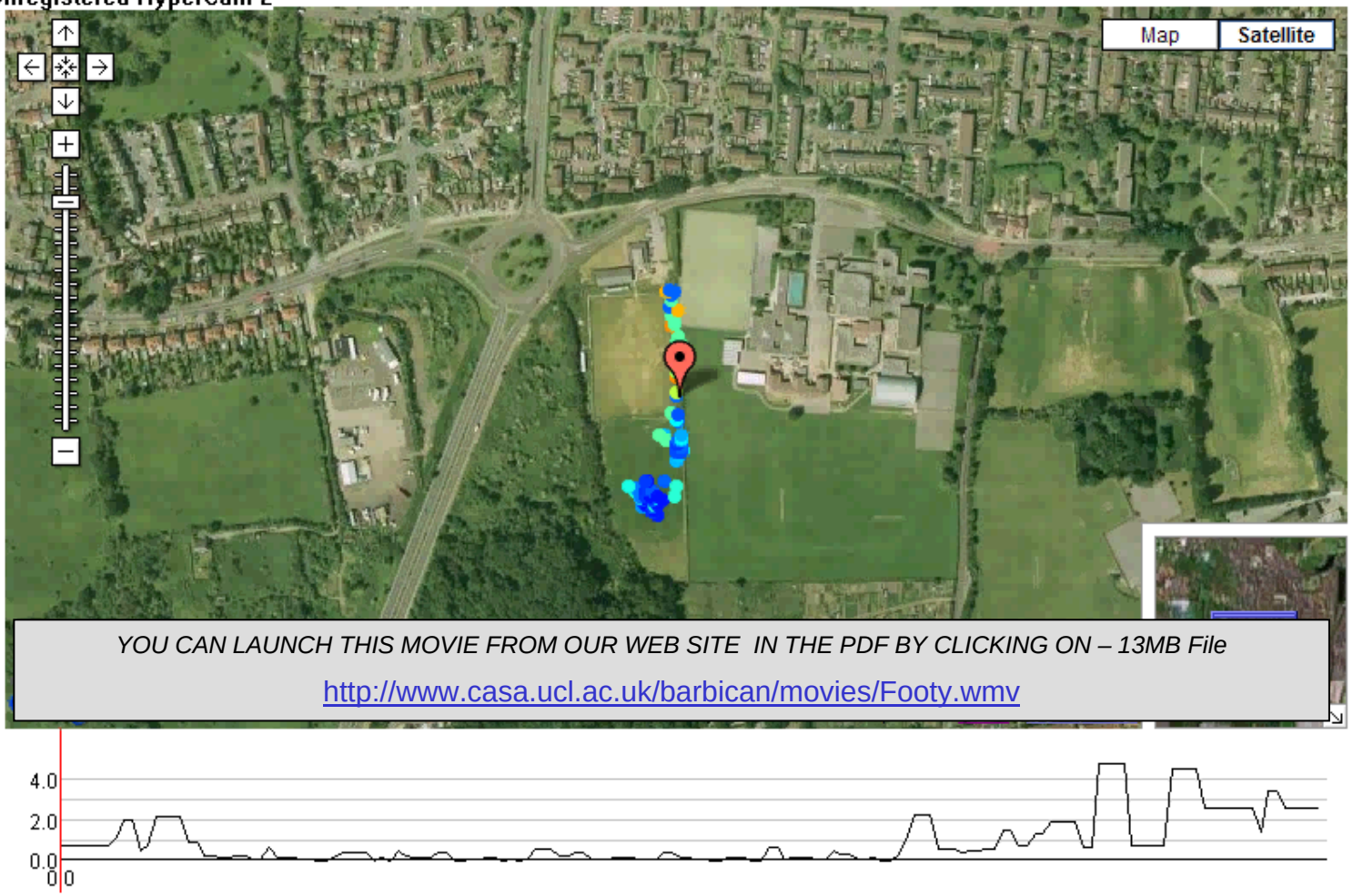
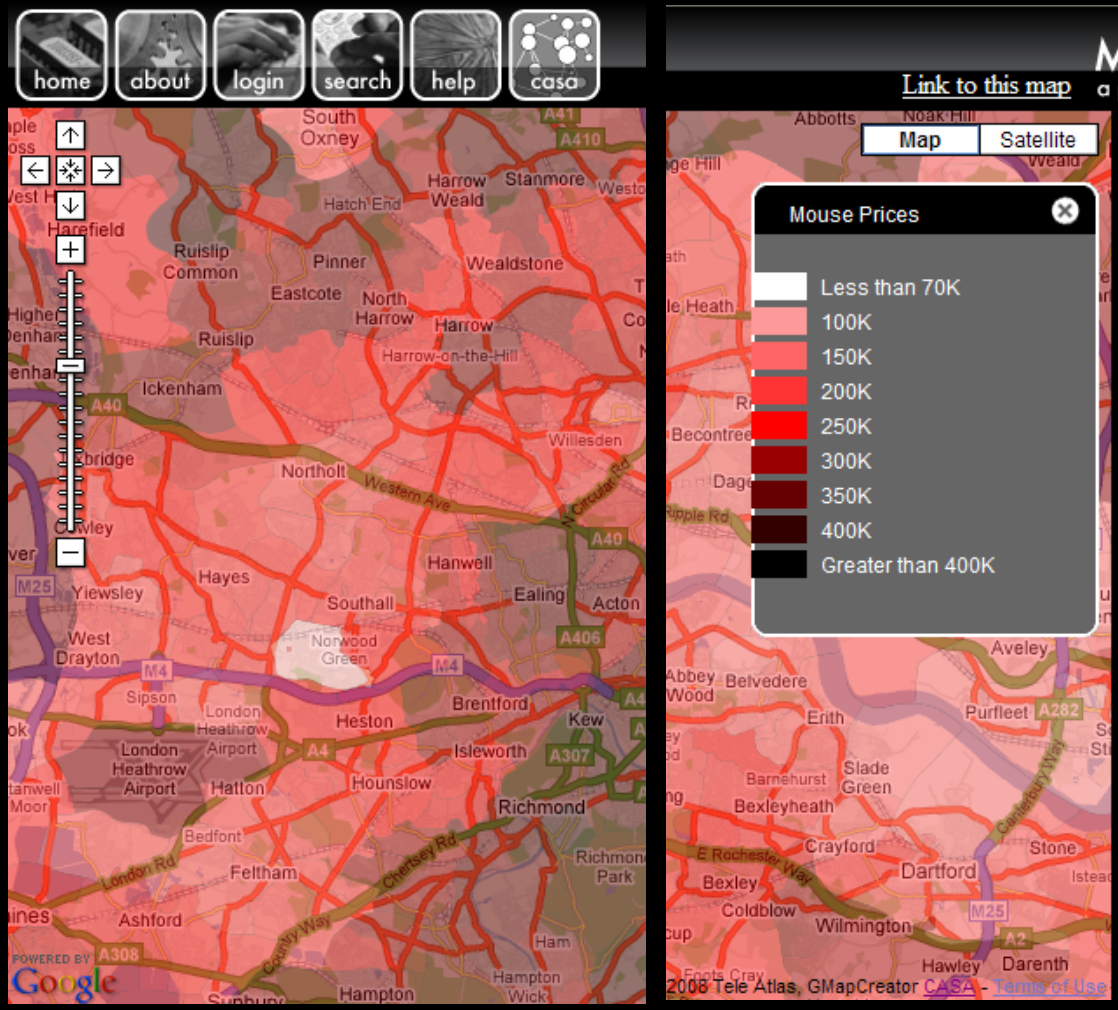
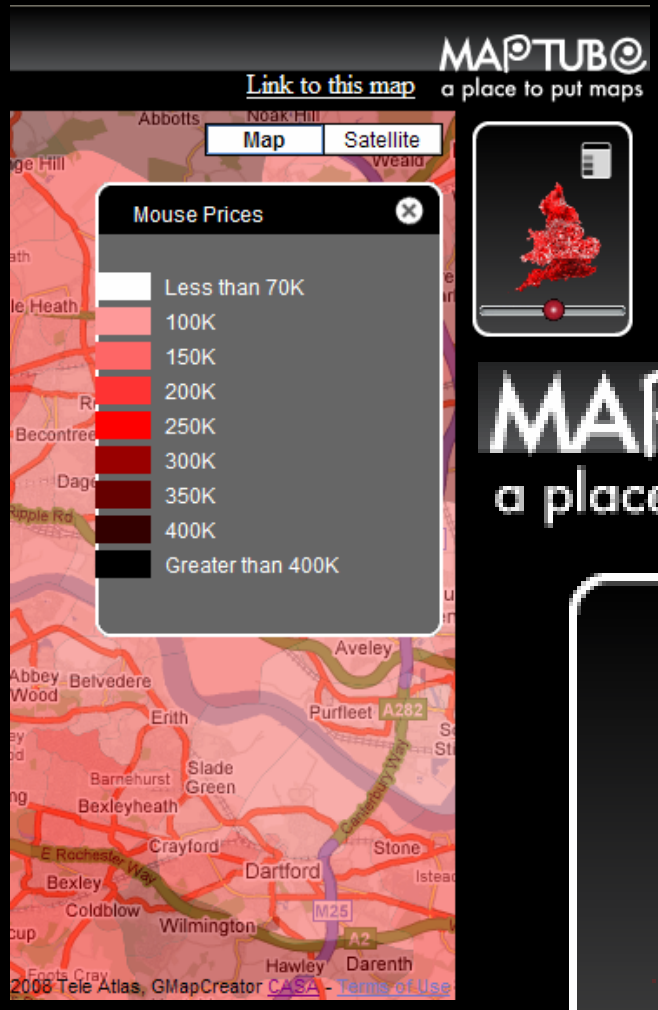
http://www.casa.ucl.ac.uk/barbican/movies/Walking-the-Dog.wmv



Enough of me and onto the real stuff…how do we do this stuff, how do we present and communicate it to ourselves and others.





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Showing records 1 to 12 of 45:

Dan Vickers' Output Area Classification (OAC)

Output Area Classification for England, Scotland and Wales

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House Price Data

more information

Viewed 176 times

Post Office Locations

The locations of post offices in England, Scotland and Wales. The data was obtained from the post office web site in October 2007.

more information

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London Tube Map

A map of the London Underground with geographically correct station positions taken from wikimedia.

more information

Viewed 46 times

Done Internet 100%

start Visual-Simulation-Batt... MapTube - A Place to... 23:16

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