

Density Happens: Cause and Effect in Urban Demography, Landscape and Lifestyles

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Density Happens is the first project by **madrid-melbourne.org**, a site devoted to the analysis of **urban life through data exploration and visualisation**. Madrid-Melbourne takes as its starting points two cities on two extreme opposites of the planet, but also wide apart in the spectrum of urban design. Between and around these two cities, **Density Happens** will deploy a continuum of measurements, analyses and visualisations of **how different cities solve the different challenges posed by the need for urban living**.

Density Happens is a spreadsheet for calculating urban lifestyles as a function of urban density



Madrid Living @ High Density



Melbourne Living @ Low Density

Density Happens in Cities

Following our Madrid-Melbourne leitmotiv, the first stage of the Density Happens project will compare these two very similar and very different cities.

Madrid is **densely built** throughout, with mixed commercial, residential, business and light industrial uses, while **Melbourne** is a highly zoned city with a very small high-built core surrounded by a **very sparse residential sprawl**.

As a result of this, **Madrid** has **3.2 million** citizens living on roughly **600 square kilometers** of land, for a population density of about **5200 inhabitants per square kilometer**.

Greater Melbourne, on the other side, has **3.8 million inhabitants** on **8,800 square kilometers**, with a population density of **430 inhabitants per square kilometer**.

Madrid is an order of magnitude denser than Melbourne



How Many People Live Here?

About As Many as Here

Put it in perspective, Greater Melbourne holds barely 20% more inhabitants than Madrid in an area more than 14 times greater. This means that Madrid is about 10 to 12 times denser than Melbourne.



Madrid: 3.2 M people on 600 km²

Greater Melbourne: 3,8 M people on 8,000 km²

(All map data and imagery, unless otherwise noted, courtesy of <http://openstreetmap.org>)

Density Happens to Urban Populations

This exploration of **the effect of population density on the urban fabric and the lifestyles of its denizens** is realized by comparing collected data on urban density, residential density, and adjusting the values for data like **energy consumption for street lighting**, fuel consumption for private vehicles, **figures for public transport usage**, and any other data that can be related to population, to surface area, or, through density, to both.

The final goal of this visualisation project is **to understand what makes cities more livable**, in terms of amenities and stressors. So we will also study **travel time to parks and museums**, commuting distances and times, **access to shopping and medical care**, and all the other hallmarks of urban living.

However, **not all is good in city life**. So we will also study the effect of density on **atmospheric contamination**, crime and suicide rates, **light and sound pollution** and other disturbances to contemporary life.

Normalising Data to Density

All these data will be compared using visualisation techniques that show data different cities after **normalising the data to demographic density**. The techniques used will be similar to those employed by Tom Carden in his London Travel Time Tube Map:

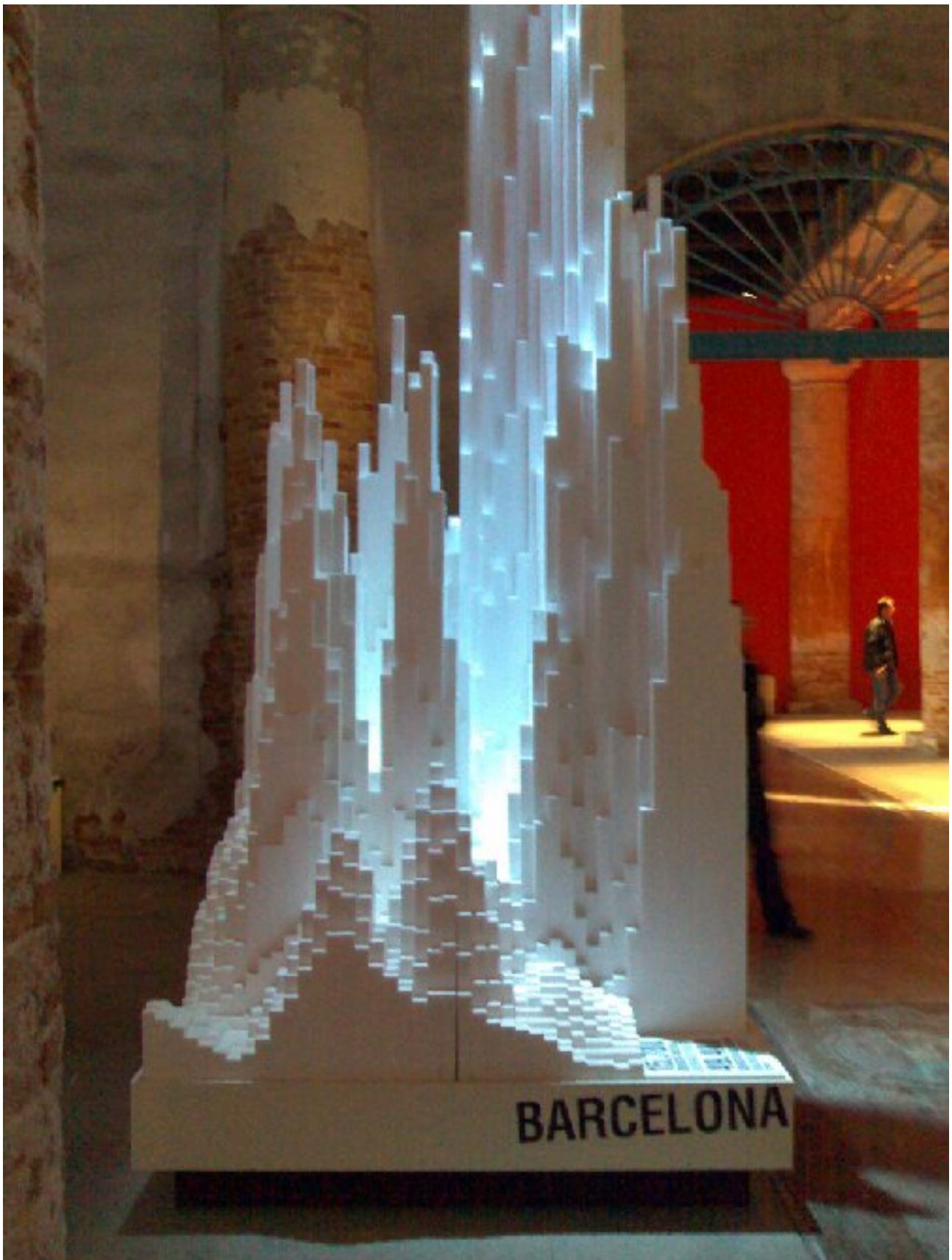


http://www.tom-carden.co.uk/p5/tube_map_travel_times/applet/

In the same way Carden's map normalises distance to travel time in order to show "**a deeper truth than that of mere geography**", Density Happens will show the effects of density on urban living by **plotting geographic data not by spatial coordinates, but by population**.

Many **other researchers** have already tackled **density** as the topic of their work, **both in art and science**. And, of course, **population density is a main focus of modern urban design**.

However, I believe **Density Happens** is the **first data visualisation project** that considers **density as the main axis of understanding of city life**.



(Foto por Ben Cerveny, visualización de la densidad urbana de Barcelona por @@)

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