Markets and the Practice of Urban Planning

Should Municipal Planning Departments be Transformed into "Municipal Planning and Economics Departments"?

By Alain Bertaud
abertaud@stern.NYU.edu

Simcoe Chapter Dinner Meeting & Seminar
Toronto, September 30, 2019
Order without Design
How Markets Shape Cities

Alain Bertaud

“Order without Design: How Markets Shape Cities”
MIT Press Dec 2018

Alain Bertaud
abertaud@stern.nyu.edu
http://alainbertaud.com
https://mitpress.mit.edu/contributors/alain-bertaud
Outline

1. Markets vs. design,
   - Economists vs Urban Planners
2. Cities as labor markets
3. Do population densities need to be regulated?
4. Case study: New York City zoning: an attempt to design the city through regulations while ignoring markets
5. Urban Planners and Economists should staff Urban Planning Departments
1. Markets vs. Design

Economists vs Urban Planners
Markets Vs. Design

Markets generate urban structures that are
“…The result of human action, but not the execution of any human design”
Adam Ferguson, an essay on the history of Civil Science, 1782

Design could also generate urban structures that are guided by
“a particular purpose or intention held in view by an individual or group”
Definition of design by Merriam Webster
Economists vs Urban Planners

Economists try to understand how markets work

• They develop theories about how markets work and are possibly distorted
• They test theories with empirical evidence extracted from real world data
• They have no preconceived ideas about how cities should look like

Planners try to shape cities into a more efficient structure

• They would like to introduce a clear rationality in the shape of cities
• They try to find an objective function to guide the shape of cities
• This objective function is usually an optimization of part of a city infrastructure
A city structure is usually generated by markets, but its primary infrastructure must be designed by planners.

Markets are grass roots forces.

Design is top-down.
Are markets still able to generate spontaneous urban structures, despite planners attempt to design cities?
Population density profile of 12 cities represented at the same scale. Every profile follows the negatively slopped exponential curve predicted by the standard urban model.
Until the beginning of the twentieth century, urban planning used to be simple: it consisted in drawing border lines between private lots and public goods and public buildings.
A simple planning objective: separating streets, public open space, and civic amenities from private lots that may be built according to market demand.

Miletus (6 century BC)

L’Enfant’s Washington plan, New York grid, Cerda’s Barcelona Eixample, Haussmann's Paris new avenues have been following this tradition.
If planners must design infrastructure, shouldn’t they also try to impose a land use that would optimize the operation of this infrastructure?
No!
Infrastructure should aim at best serving the urban structure created by markets
Unfortunately, planners now are increasingly attempting to design detailed land use through regulations while often neglecting the design, construction, and maintenance of infrastructure. The infrastructure should serve the spontaneous structures created by markets.
Le Corbusier Plan Voisin for Paris
A uniform “optimum design” imposed by planners on citizens

Sources: Paris built-up background map: OpenStreetMap®. Plan Voisin: 3D model drawn by author from plans and drawings from "Fondation Le Corbusier" web site and "The City of Tomorrow and its Planning", Le Corbusier, 1929
Le Corbusier died in 1965, does he still have followers?
Even in New York in 2019, the mayor of New York thinks that a city should be designed top down
“What’s been hardest is the way our legal system is structured to favor private property.

I think people all over this city, of every background, would like to have the city government be able to determine which building goes where, how high it will be, who gets to live in it, what the rent will be…”

“Look, if I had my druthers, the city government would determine on every single plot of land, how development would proceed. And there would be very stringent requirements around income levels and rents. That’s a world I’d love to see...[people]’d love to have a very, very powerful government, including a federal government, involved in directly addressing their day-to-day reality.”

2. Cities are primarily labor markets

The efficiency of large labor markets is the main cause of ever-growing cities
Commuters mobility and the spatial distribution of jobs

A. The classical monocentric model
B. The dispersed model
C. The composite Model
D. The "Urban village" model (doesn't exist in real world)
Sydney 30 minutes commute plan
The main goal of urban planning: improving mobility and affordability

- **Mobility**: all households should be able to reach all possible jobs in less than one hour commuting time (one way)

- **Affordability**: All households should spend less than 35% of their income on rent or mortgage while commuting less than one-hour.
3. Do population densities need to be regulated?

Planners certainly need to project population and employment densities, but do they need to transform their projections into densities regulations?
Land consumption per person (or its inverse the population density) define the physical size of a city for a given population.
Comparative average population densities in the built-up areas of 60 metropolitan areas

Source: "Order Without Design" Alain Bertaud, 2014
The Built-up Area of Atlanta and Barcelona Represented at the Same Scale

Atlanta Density: 6 p/ha

2.5 million people (1990)
4,290 km² (built-up area)

Barcelona Density: 177 p/ha

2.8 million people (1990)
162 km² (built-up area)

Population densities are not abstract numbers, they represent a different environment, different consumers’ trade-off and different cultural values

(Google Earth images of Atlanta and Barcelona suburbs represented at the same scale)

Atlanta suburb, 4.9 km from CBD (12 p/ha)

Barcelona suburb, 2.9 km from CBD (260 p/ha)
The historical change in the population of Manhattan and Paris Intra-Muros (Municipal boundary)

Population of Manhattan and Paris municipality from 1600 to 2014
The variations of Manhattan densities from 1849 to 2010

https://www.youtube.com/watch?v=AGXJTwkc0CA
4. Case study - New York City zoning:
an attempt to design the city through regulations while ignoring markets
New York Zoning

Preventing illusory negative externalities, shaping the city through regulations in the name of public interest
Because of the new detailed zoning specifications introduced since the 60s

40 Percent of the Buildings in Manhattan Could Not Be Built Today

Because They Are Too Tall ...

These are buildings that do not conform to New York City's zoning code for at least one reason.

These tend to be apartment buildings concentrated on the Upper East Side and Upper West Side.
Or Too Many Businesses ...

Technically, too many square feet dedicated to commercial uses. Mostly concentrated in Midtown and the East Village.

Or They Have Too Many Apartments ...

The West Village and Chelsea are the biggest offenders in terms of density.

The detailed specifications for each zoning district imply maximum number of Dwelling Units per acre of residential lot, but these are not explicit, so nobody knows how many DU are allowed in New York and what is their size distribution.

### High-Density Non-Contextual Residence District

<table>
<thead>
<tr>
<th>R10 QH</th>
<th>Lot Area</th>
<th>Lot Width</th>
<th>Rear Yard</th>
<th>Lot Coverage</th>
<th>FAR</th>
<th>Base Height</th>
<th>Building Height</th>
<th># of Stories</th>
<th>DU Factor</th>
<th>Required Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Narrow Street</td>
<td>1,700 sf</td>
<td>18 ft</td>
<td>30 ft</td>
<td>100%</td>
<td>10.00</td>
<td>60-125 ft</td>
<td>185 ft</td>
<td>n/a (21)</td>
<td>680</td>
<td>40% of DU</td>
</tr>
<tr>
<td>Basic Wide Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclusionary Narrow Street</td>
<td>1,700 sf</td>
<td>18 ft</td>
<td>30 ft</td>
<td>100%</td>
<td>12.00</td>
<td>60-155 ft</td>
<td>210 (215) ft</td>
<td>21</td>
<td>680</td>
<td>12% of IRHU</td>
</tr>
<tr>
<td>Inclusionary Wide Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Low-Density Non-Contextual Residence Districts

<table>
<thead>
<tr>
<th>R1 + R2</th>
<th>Lot Area</th>
<th>Lot Width</th>
<th>Front Yard</th>
<th>Rear Yard</th>
<th># of Side Yards Each</th>
<th>Total Side Yards</th>
<th>Open Space Ratio</th>
<th>FAR</th>
<th>Sky Exposure Plane</th>
<th>DU Factor</th>
<th>Required Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1-1</td>
<td>9,500 sf</td>
<td>100 ft</td>
<td>20 ft</td>
<td>30 ft</td>
<td>15 ft</td>
<td>35 ft</td>
<td>150.0</td>
<td>0.50</td>
<td>Starts at 25 ft</td>
<td>4,750</td>
<td>1 per DU</td>
</tr>
<tr>
<td>R1-2</td>
<td>5,700 sf</td>
<td>60 ft</td>
<td>20 ft</td>
<td>30 ft</td>
<td>8 ft</td>
<td>20 ft</td>
<td></td>
<td></td>
<td></td>
<td>2,850</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>3,800 sf</td>
<td>40 ft</td>
<td>15 ft</td>
<td>30 ft</td>
<td>5 ft</td>
<td>13 ft</td>
<td></td>
<td></td>
<td></td>
<td>1,900</td>
<td></td>
</tr>
</tbody>
</table>

### Low-Density Contextual Residence Districts

<table>
<thead>
<tr>
<th>R1 + R2</th>
<th>Lot Area</th>
<th>Lot Width</th>
<th>Front Yard</th>
<th>Rear Yard</th>
<th># of Side Yards Each</th>
<th>Total Side Yards</th>
<th>Lot Coverage</th>
<th>FAR</th>
<th>Perimeter Wall/Building Height</th>
<th>DU Factor</th>
<th>Required Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1-2A</td>
<td>5,700 sf</td>
<td>60 ft</td>
<td>20 ft</td>
<td>30 ft</td>
<td>8 ft</td>
<td>20 ft</td>
<td>30%</td>
<td>0.50</td>
<td>25/35 ft</td>
<td>2,850</td>
<td>1 per DU</td>
</tr>
<tr>
<td>R2A</td>
<td>3,800 sf</td>
<td>40 ft</td>
<td>15 ft</td>
<td>30 ft</td>
<td>5 ft</td>
<td>13 ft</td>
<td>n/a</td>
<td>0.50</td>
<td>21/35 ft</td>
<td>1,900</td>
<td></td>
</tr>
<tr>
<td>R2X</td>
<td>2,850 sf</td>
<td>30 ft</td>
<td>15 ft</td>
<td>20 ft</td>
<td>2 ft</td>
<td>10 ft</td>
<td>n/a</td>
<td>0.50</td>
<td>21/35 ft</td>
<td>2,900</td>
<td></td>
</tr>
</tbody>
</table>
Section 275-6 of Article 7-B of the Multiple Dwelling Law:

Zoning for artists in district zoned “light manufacturing” that has no light manufacturing

- “UnderSections275-6 ofArticle7-B of the Multiple Dwelling Law, an "artist" is defined--for the purpose of qualifying for joint living-working quarters…”

- The text further define the purpose of the zone as: “The SoHo Zoning Resolution permits fine artists working on a professional level who demonstrate a need for a live/work loft to reside in specific lofts zoned for manufacturing. Artist certification provides the document that equates the person named therein with a light manufacturer.”
Manufacturing zoning (M1-5B and M1-5A) in Soho Manhattan where only artists are allowed to reside:

“Artist certification provides the document that equates the person named therein with a light manufacturer.”
5. Planners and Economists should staff Urban Planning Departments
The struggle between market and design dominates most urban planning regulations all around the world, with few exceptions (Tokyo).

1. Markets forces over time are able to modify existing zoning regulations, but only after a long and costly legal process, which increases enormously transaction costs.

2. The inelasticity of housing supply is the outcome of zoning regulations that design the city by proxy.

3. Proven negative externalities and impact on prices and rents are absent from the regulatory debate.

4. Any change in the physical shape of the city is resisted (dilution of property rights).
# Executive branch
## mayor & City Council

<table>
<thead>
<tr>
<th>Staff agencies</th>
<th>Line agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Planning &amp; Economics</td>
<td>Roads</td>
</tr>
<tr>
<td>Legal</td>
<td>Transport</td>
</tr>
<tr>
<td>Finance</td>
<td>Sanitation</td>
</tr>
<tr>
<td>Human resources</td>
<td>Water and Sewer</td>
</tr>
<tr>
<td>Others…</td>
<td>Heritage</td>
</tr>
<tr>
<td></td>
<td>Parks</td>
</tr>
<tr>
<td></td>
<td>Storm Drainage</td>
</tr>
<tr>
<td></td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Culture</td>
</tr>
<tr>
<td></td>
<td>Housing</td>
</tr>
<tr>
<td></td>
<td>Fire department</td>
</tr>
<tr>
<td></td>
<td>Police dept.</td>
</tr>
</tbody>
</table>

...