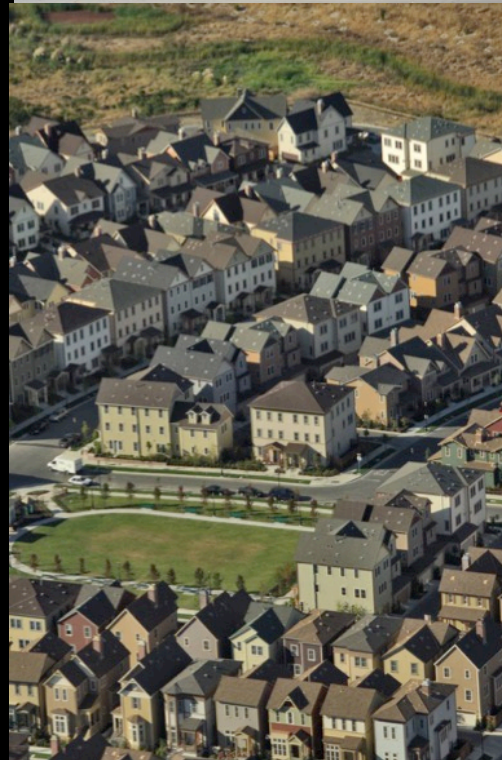


# Form-Based Codes: A Tool for Shaping Community Form and Character for Smarter Growth

Geoffrey Ferrell  
Principal, Ferrell Madden LLC  
[geoff@ferrell-madden.com](mailto:geoff@ferrell-madden.com)

**FERRELL  
MADDEN**

urban design,  
town planning, &  
form-based coding



# Principles and Components

**Form-Based Codes 101**

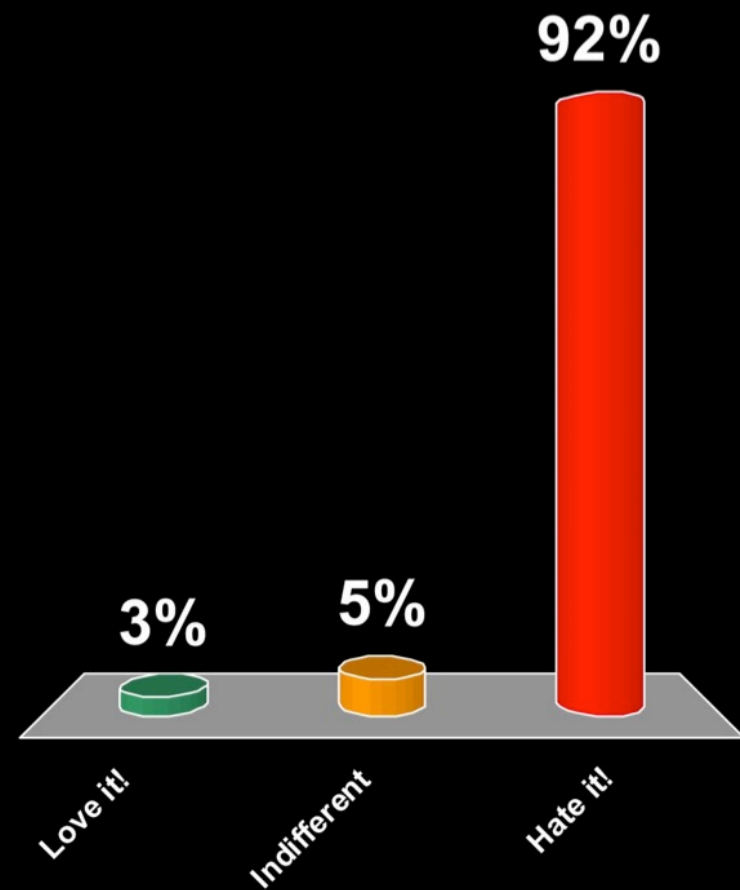


**Why would a City Use a Form-Based Code?**

# How would you rate this?



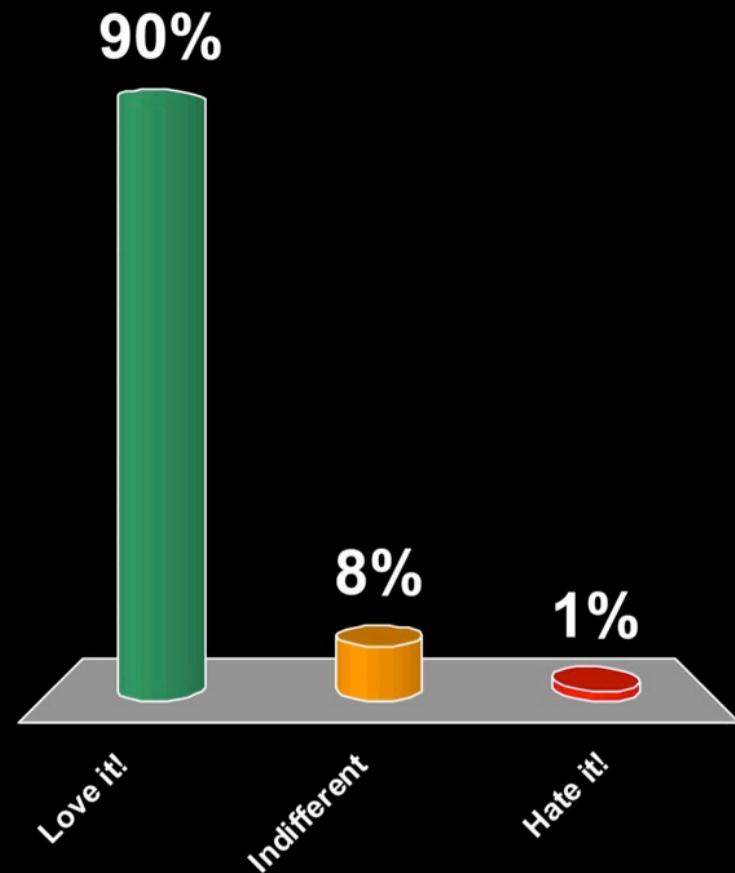
1. Love it!
2. Indifferent
3. Hate it!



# How would you rate this?



1. Love it!
2. Indifferent
3. Hate it!



# The Limits of Aesthetic Regulations





**What the community said it  
wanted**

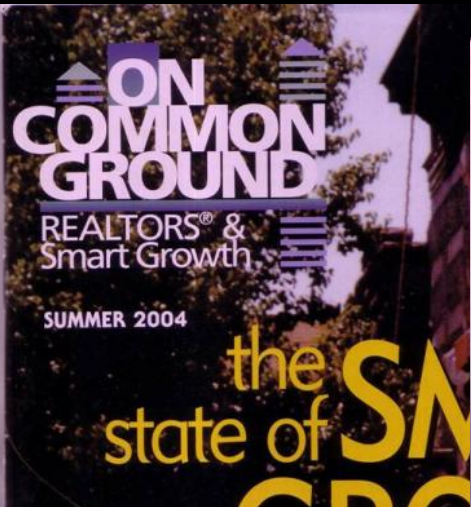


Well-intentioned policy statement: Infill and develop in existing urbanized areas. Build affordable multi-family housing near transportation corridors.



Well-intentioned policy statement: Infill and develop in existing urbanized areas. Build affordable multi-family housing near transportation corridors.





What do you do when development codes you build or maintain of town you want?

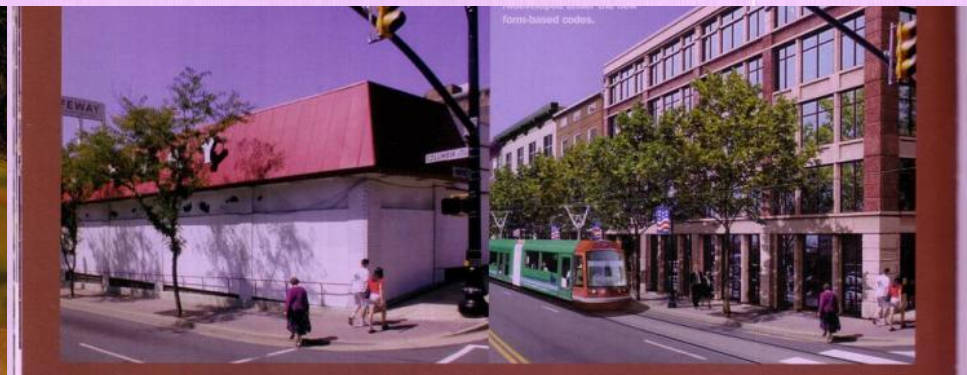
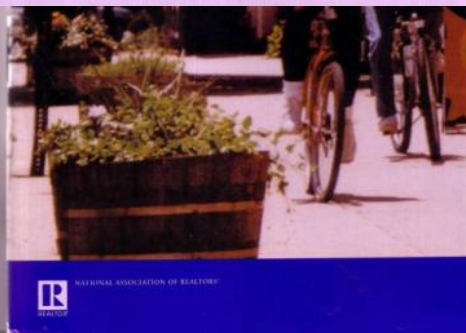
Columbia Pike Revitalization Organization, whose office is located on the Pike. "We saw bank branches with drive-through lanes, fast food franchises with drive-through lanes—and that's been about it. We also saw long-time businesses either close or move to other parts of the county. There are pizza stores, check-cashing stores, laundromats, dry cleaners, dollar stores—these are all services people use, but you can't buy a men's suit, women's clothing, a pair of shoes, or even a book on Columbia Pike."

In January 1998, Arlington County Board chair Chris Zimmerman recognized the Pike's need for revitalization. A challenge came from the long-time property owners on Columbia Pike, however. Many of the existing buildings were owned outright by second- and third-generation owners who

enhance the richness of their community, while ensuring none of the long-time local businesses would be replaced.

To tap the potential of this diamond in the rough, the Columbia Pike community developed a comprehensive Columbia Pike Revitalization Plan, which included adoption of a form-based (as opposed to a conventional use-based) zoning code. The code is a legal document that regulates land development by setting careful and clear controls on building form to create good streets, neighborhoods, and parks, with a healthy mix of uses. Components of the code include clear definitions of terms, a regulating plan, building envelope standards to determine each building's form, standards for siting and streetscapes and for architecture, and administrative guidelines for exped-

Everybody hates sprawl, but the builders aren't violating rules; they're building exactly what the codes call for.



**Why are Cities Using Form-Based Codes?**

# Yesterday's problems

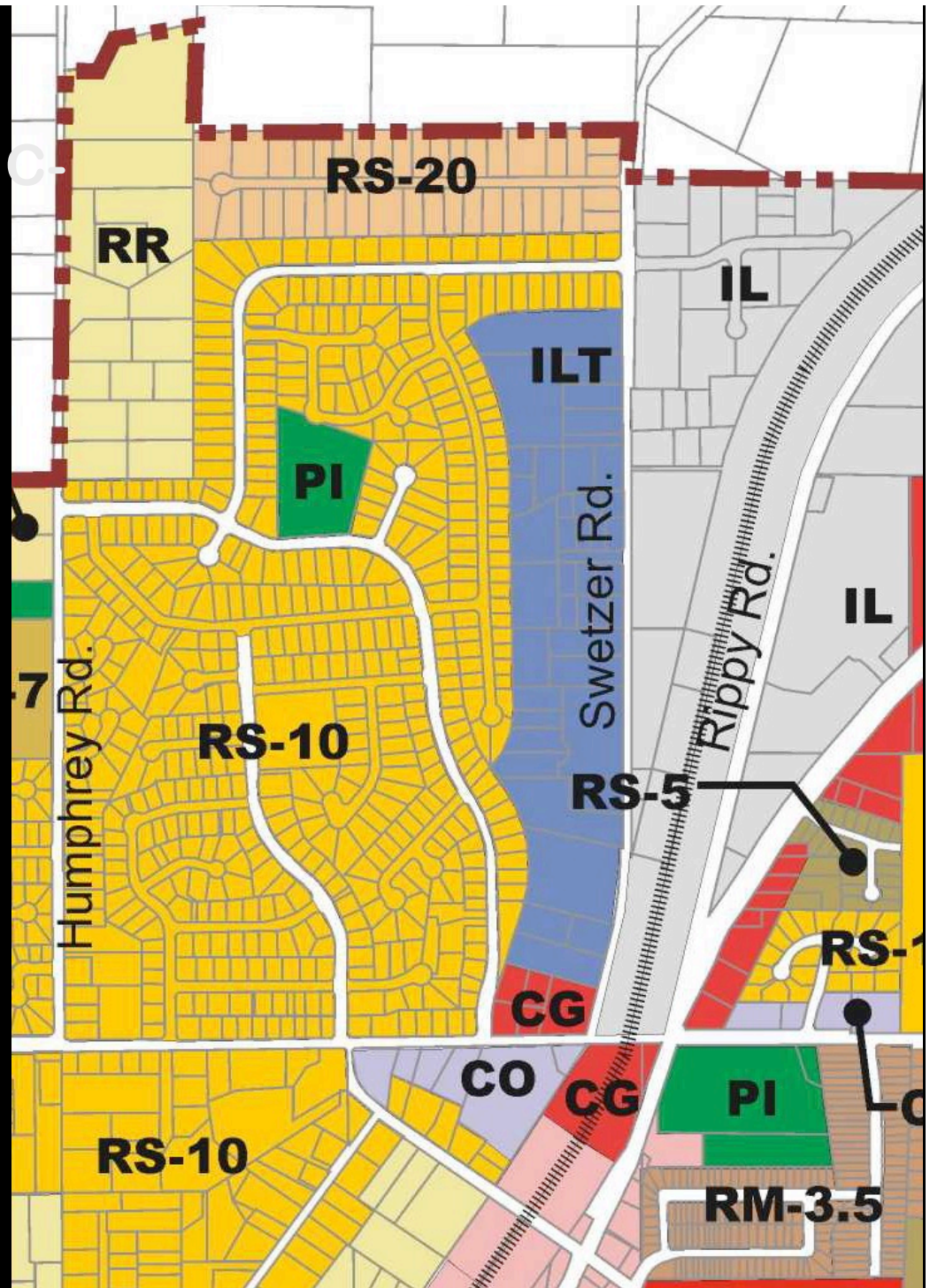


Looking west along Chicago River from an Illinois Central Elevator, 1908.

# Yesterday's tools:

- Separation of Uses (e.g. C-1; RR; RM...)
- Density/FAR

(micro-management)



Yesterday's tools: great at preventing



Levittown NY

Not clear about what it intends to make!

# Yesterday's tools: Separation of Uses



This is “red” on the zoning map.



Anywhere USA

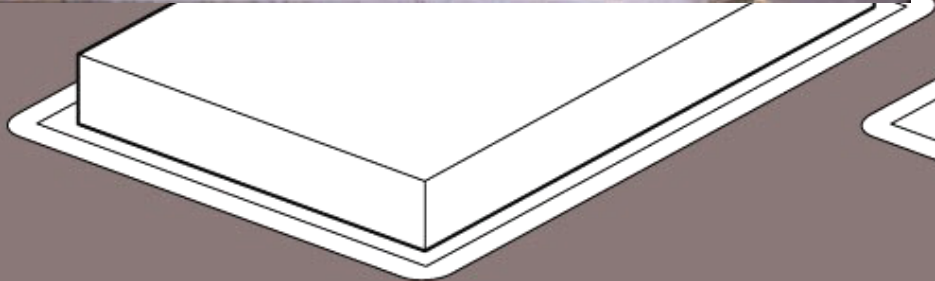


This is “red” on the map too.



My Town USA

# Yesterday's tools: Floor Area Ratio (FAR)



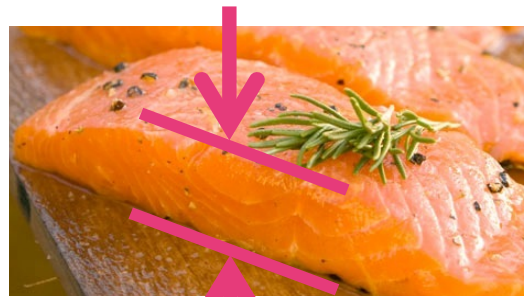
FAR 1.0



FAR 1.0

# Would you describe other things this way?

max .75 inches tall



oops!



FAR is best as a measuring tool;  
not for driving design or decision-making

# Removing Obstacles for Urbanism (Illogical Zoning)

## Hurdles to Reuse Space for Pastry Shop:

Zone R7-Allows 75' tall residential, but not commercial

- Two-part special use permit (**\$560**)
- City Planning Board (meets once a month)- will likely deny application
- Planning Board of Appeals-meets once a month (**\$1,000**)
- Nine space parking lot required for occupancy permit (det. by #\_\_ of tables)  
Cost=**\$20,000** (must cutdown tree)
- Lost rent: **\$2,000-\$4,000** min.

*“Using Conventional ‘Use-Based’  
Zoning for ‘walkable urbanism’ and  
areas of transformation is like  
playing the piano with your palms  
instead of your fingers.”*

*(or like walking on your hands instead  
of your feet.)*

*From Euclid to Kafka*



# Development Regulation Today:

*Out of Balance*

# Regulating Mechanism: Balance -- Form-Based Codes

Form

Use/Density

Management





# Regulating Mechanism: Balance -- Form-Based Codes

Use/Density

Management

Form

# Regulating Mechanism: Balance -- Form-Based Codes



Form

Management

Use

**Form vs. Use**

# Form vs. Use



# Form vs. Use



# Mixed-Use 'Medium' Density Transportation Corridor



# Mixed-Use 'Medium' Density Transportation Corridor



# Regulating Mechanism: Balance -- Form-Based Codes



Form

Management

Use



# Community Health

www.usatoday.com THE NATION'S NEWSPAPER

**USA TODAY**  
NO. 1 IN THE USA

Stop Think Then speak! Unless you Wanda Syl

**Special Sports**

**Tick. Tick. Tick. Tick.**  
For likely top pick Carson Palmer, waiting game is excruciating, 1C  
Miami's McGahee draws a crowd, 3C



**NFL draft**

**Minn. stuns Colo. in OT**  
On night of Game 7s, Philadelphia, Vancouver win easily, NHL, 1, 8C

By Martha T. Moore  
USA TODAY

Why don't Americans walk anywhere?  
Old answer: They're lazy.  
New answer: They can't.  
There is no sidewalk outside the front door, school is 5 miles away, and there's a six-lane highway between home and the supermarket.  
Many experts on public health say the way neighborhoods are built is to blame for Americans' physical inactivity — and the resulting epidemic of obesity.  
The health concern is a new one on the issue of suburban sprawl, which metro regions have been struggling with for a decade. These health experts say the deep-pocketed forces of private foundations and public agencies into discussions about what neighborhoods should look like. Whether suburbs are bad for many Americans depends on how they're built. In a house with a car, usually tackling the savvy of lead tobacco, is underslice, head of America's obesity group based in Portland, Ore.

**WALK CANT WALK**

**The way cities and suburbs are developed could be bad for your health**

**Cover story**

Centers for Disease Control says 8,000 residents of Atlanta live in the neighborhood they live in. The Foundation in New Jersey.

Please see COVER STORY next page ▶

By Tracy Palmer, USA TODAY

Wednesday, April 23, 2003

**Newsline**  
News Money Sports Life

**Stocks surge on earnings reports**

	Close	Change
Dow Jones industrial average	8484.99	▲ 150
S&P 500 composite	1451.36	▲ 20
10-year yield	4.89%	▲
USA TODAY Internet 50	78.37	▲

By Dana Livshin, Associated Press

**Sh. mail site reopens after scare**  
show that a white powder found by postal workers at mail-processing facility in Tacoma, Wash., is a toxic biological agent. Above, as a precaution, postal workers in protective suits.



Look familiar?



In the news...

# *In the Car for Life*

## More and More Traffic Isn't Headed for the Office

By KATHERINE SHAVER  
*Washington Post Staff Writer*

*"You have  
no choice"  
but to drive.*

*Katy Joseph  
of Crofton,  
who commutes  
45 miles round  
trip to work*

Katy Joseph and her husband, Bill, drive about 45 miles round trip between their home in Crofton and their jobs in Washington, spending much of that commute, like thousands of drivers, stuck in exhaust-spewing traffic that they admittedly help create.

But it's not the Josephs' daily drive to work that most interests planners trying to reduce the region's traffic and pollution. The real culprit, traffic experts said, is the rest of the driving they do to navigate a busy life—running to the grocery store, the drugstore, the mall and church, and

Joseph, 39, a legal secretary. "But when you look at the whole picture, doesn't seem that bad. . . . I think I'm home [from work] for four minutes and then it's off in the car."

In short, Joseph said, "driving my life."

In fact, traffic experts said, the Josephs are right in sync with American trends. Non-work trips for shopping, driving children to activities and running errands account for 85 percent of all trips people make, up from 8 percent in 1990, according to a recently released national travel survey conducted by the U.S. Department of Transportation.

Even during peak morning an

# Thirteen trips a day

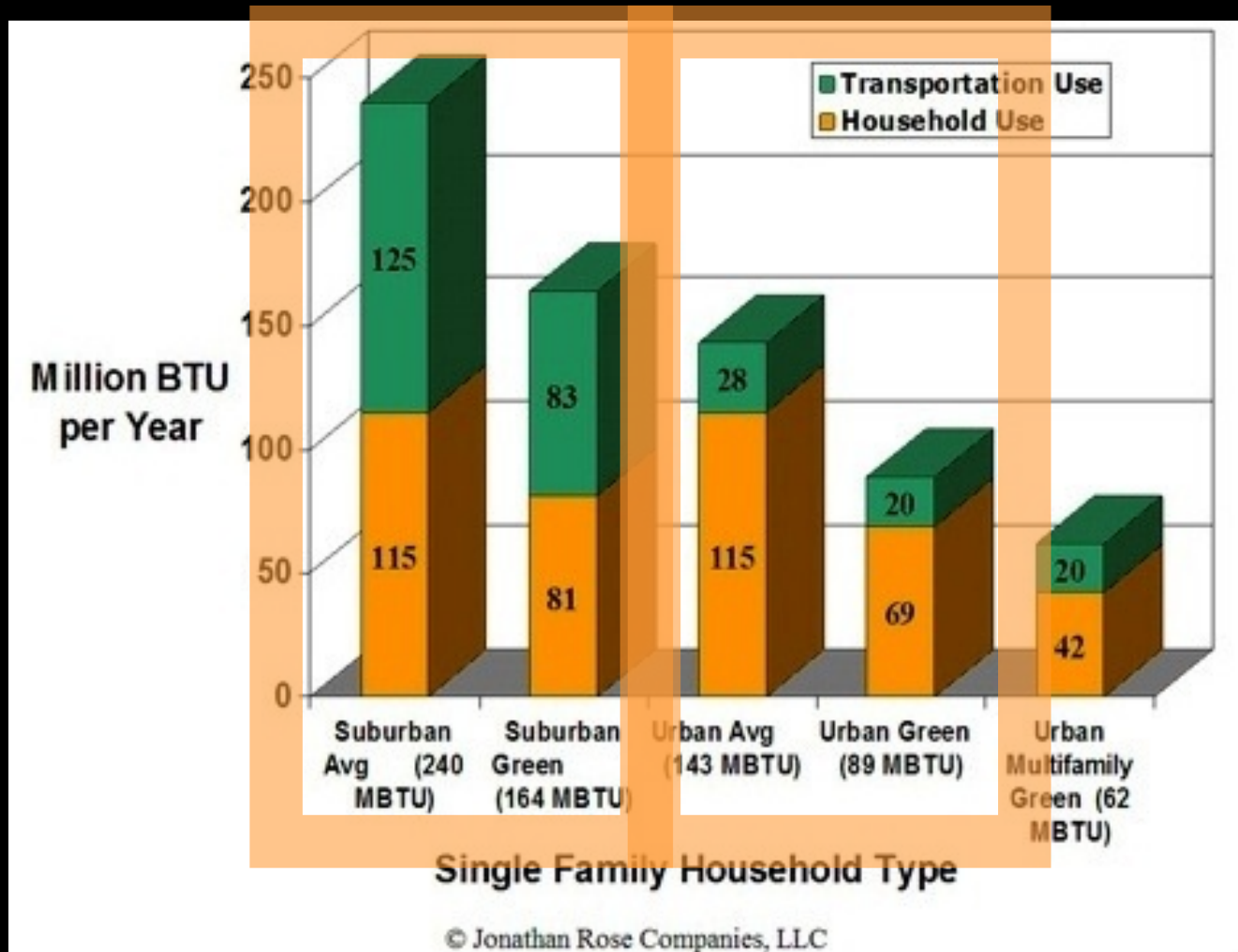


Wasteful Consumption of Land, Time, and Energy

# True Sustainability

Report from Environmental Building News: For an office building built to modern energy codes (ASHRAE 90.1-2004), **more than twice as much energy is used by commuters than by the building.**

*What about residential?*



# Recognizing Changes in the Way People Live

- Majority of Americans want something other than a detached single family home on a large lot -- *research by Chris Nelson*
- Only 70% of 18-25 year-olds have driver's license (and average VMT for all Americans has continued to decrease)
- Creative Class – opting for location to live over job selection
- General desire for walkable, mixed-use places

# Designers Are Not Used to Designing Buildings Fronting a Street



Oakland, CA

# Designers Are Not Used to Designing Buildings Fronting a Street





# Why basic regulation is important



# Diverse Applications

1. Downtown Master Plans
2. Corridor Revitalization Plans
3. Neighborhood Revitalization Plans
4. Specific Plan Development Standards
5. New Walkable Neighborhoods
6. Historic Resource Preservation Planning
7. Transit Village Implementation
8. Greyfield Redevelopment
9. University/Community Interface Plans
10. Subdivision Ordinances
11. General Plan Implementation
12. Complete Development Code Updates
13. Model Codes
14. Regional Plan Implementation

# What is a Form-Based Code?

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## The Definition

# What is a Form-Based Code?

---

## The Definition

A form-based code is a land development regulation that fosters **predictable built results** and a **high-quality public realm** by using **physical form (rather than separation of uses)** as the organizing principle for the code. A form-based code is a regulation, not a mere guideline, adopted into city, town, or county law. A form-based code offers a powerful alternative to conventional zoning regulation.

Form-Based Code Institute

# Common Misconceptions

Doesn't address Use

All about graphics (*insert pretty pictures into zoning*)

A one-size-fits-all template that makes you fit your town to it

Only for greenfield development

Isn't zoning

Dictates the architecture, squashes creativity

Must be applied Citywide

Requires high density

Makes everything 'by right'

Improves your golf score and makes you jump higher

# What is a Form-Based Code?

---

The primary goal is to shape the *Public Realm* or *Street-Space*.

# Public Realm / Street-Space



Dover, Kohl & Partners 2011

# Public Realm / Street-Space



Dover, Kohl & Partners 2011

The “public” space *in-between* the facades



# Public Realm / Street-Space



Transition space (*semi-public/semi-private...*)  
Transition dimension (*thinner = more urban*)

# What is a Form-Based Code?

---

The primary goal is to shape the *Public Realm* or *Street-Space*.

The means are:

1. Building Form (and function) regulation
2. Street-Space Design

What does it take to  
make a great place?

*(Street-Space first)*

# Building Form: Height

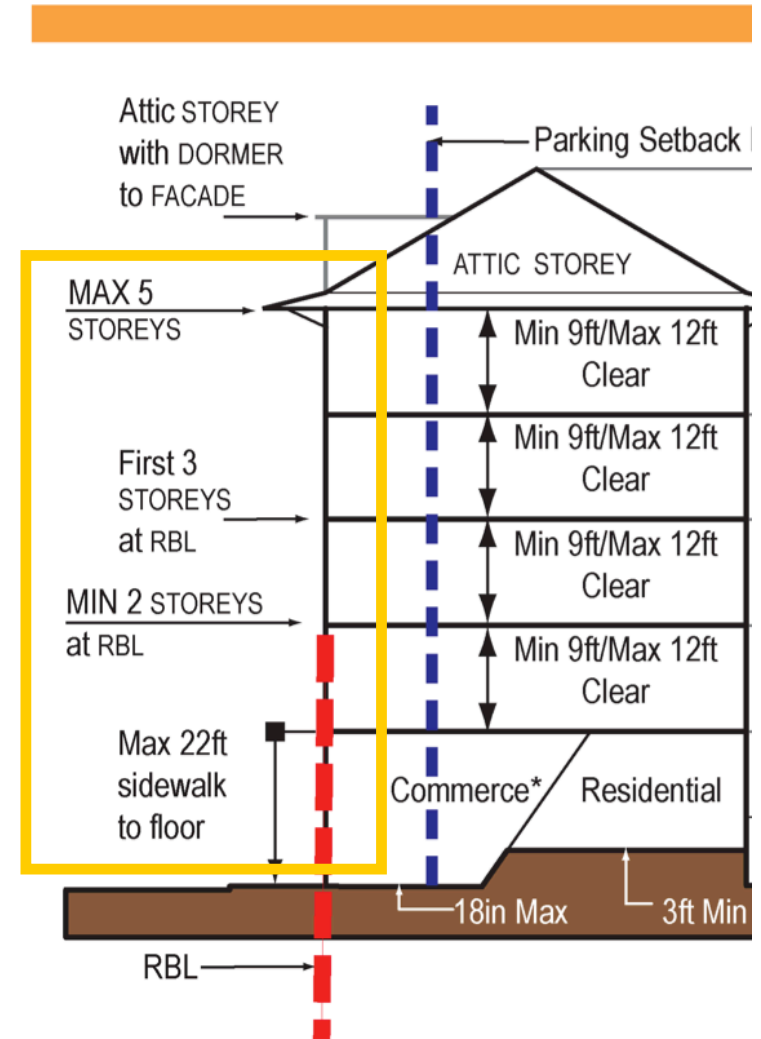
How much is too little, how much is too much?



# Building Form: Height



# Building Form: Height



# Building Form: Siting



Build-To Line:

# Building Form: Siting

---



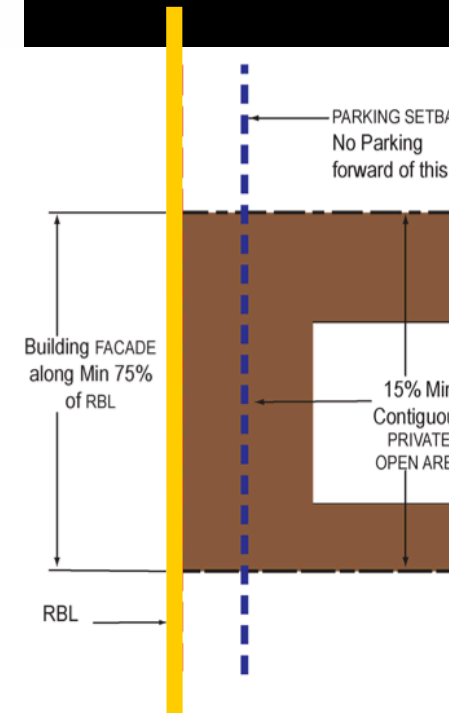
**Setback**



# Building Form: Siting



# Building Form: Siting

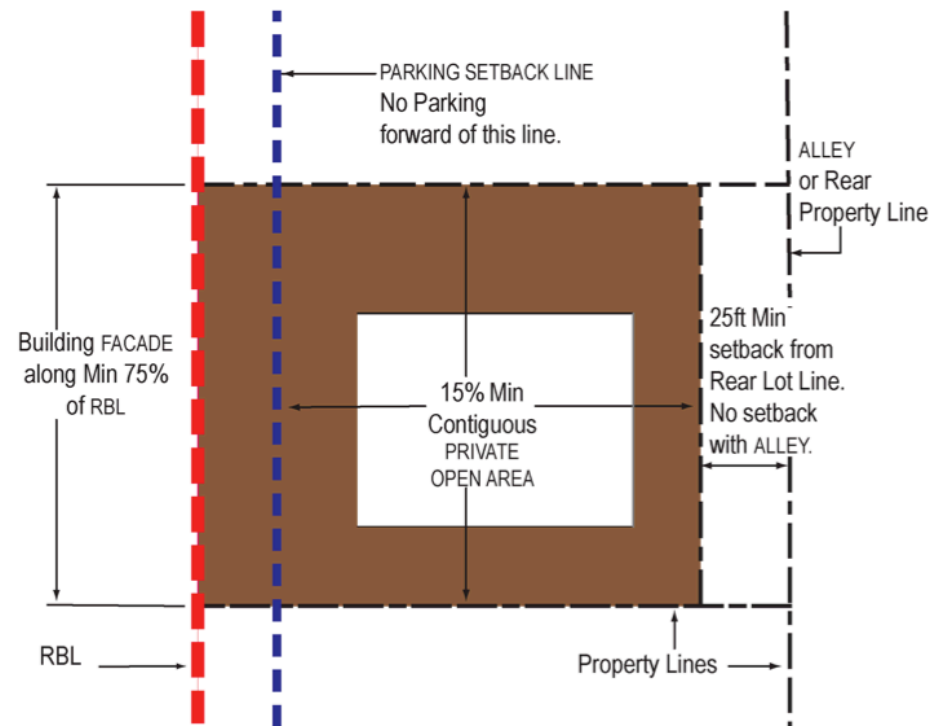




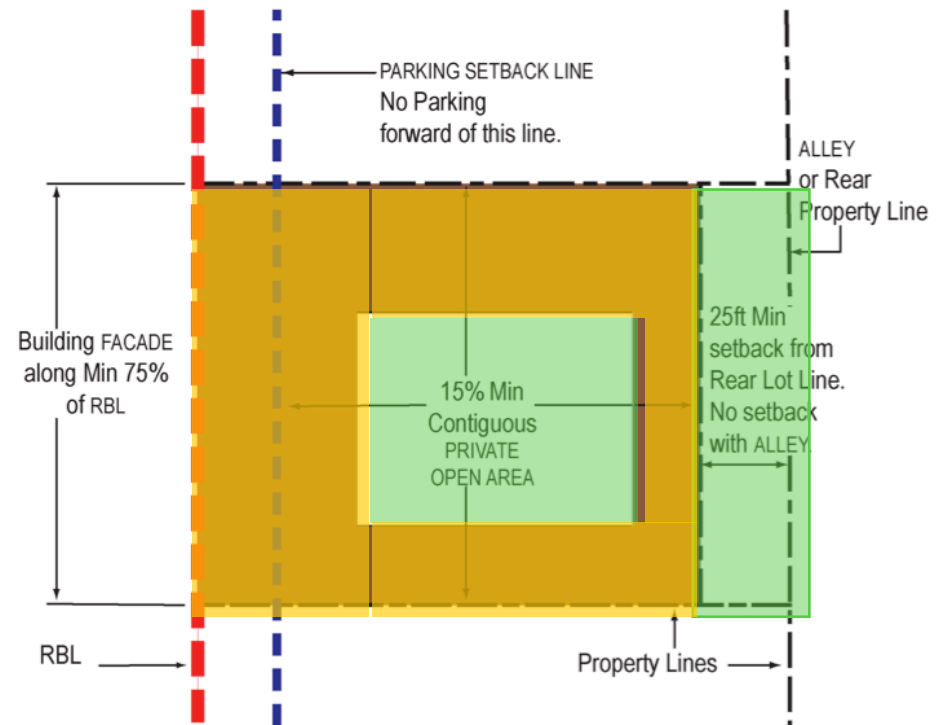
# Building Form: Siting



# Building Form: Siting



# Building Form: Siting



# Building Form: Siting



# Building Form: Frontage Elements

Upper storeys  
30% - 70%

Ground storey  
60% - 90%

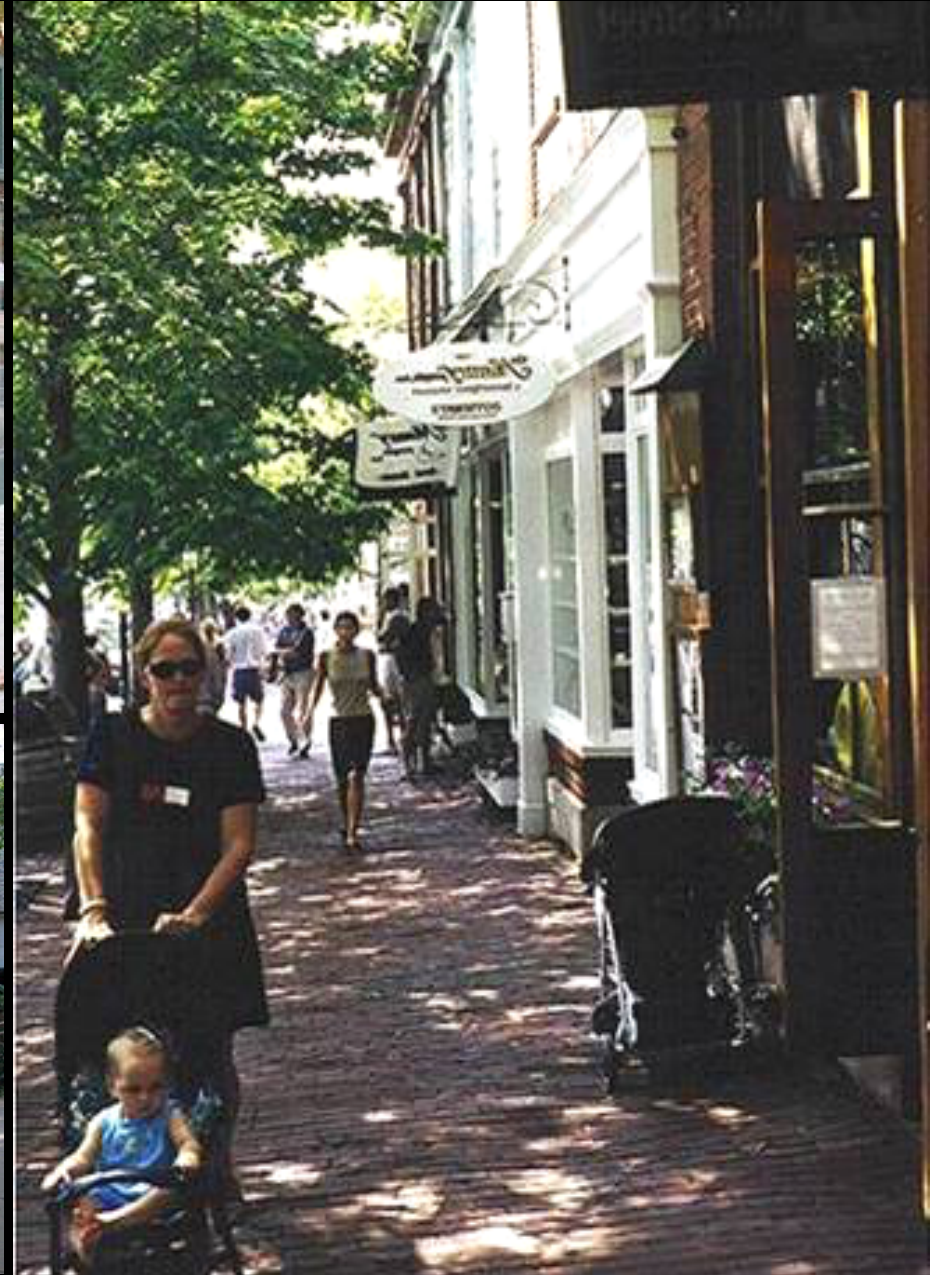


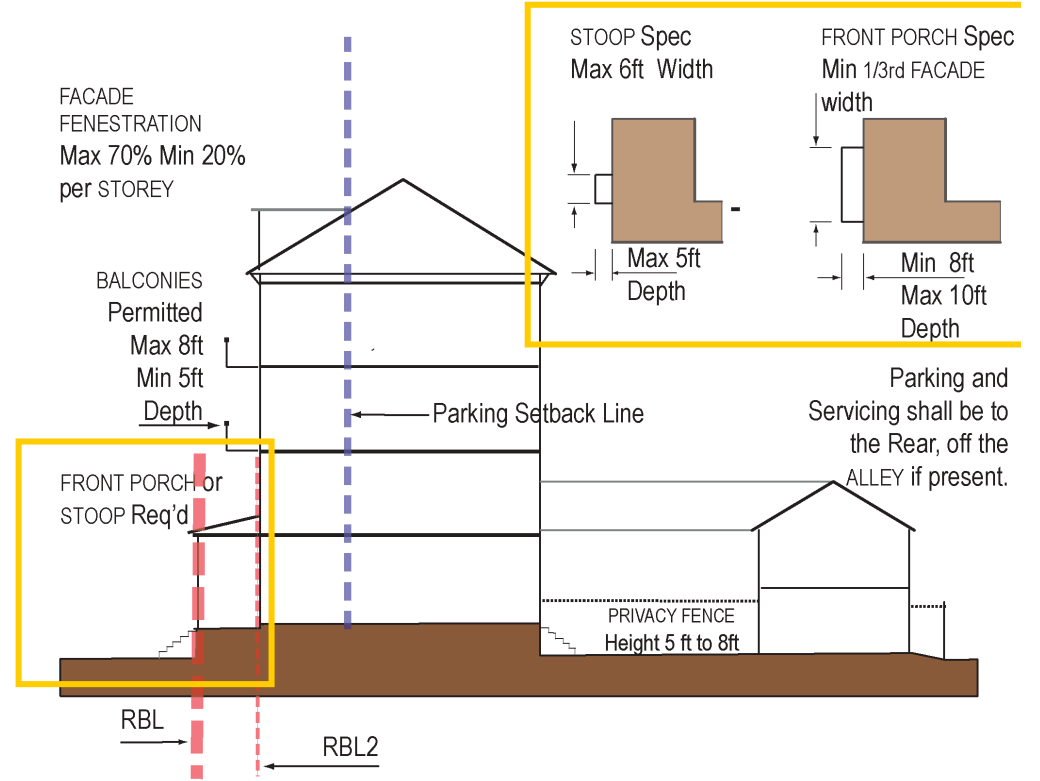


# Building Form: Frontage Elements









## ELEMENTS



# Building Form: Uses

Some things are more important than others.

And for many things it is important to allow variety

Match the level of control to the level of need.



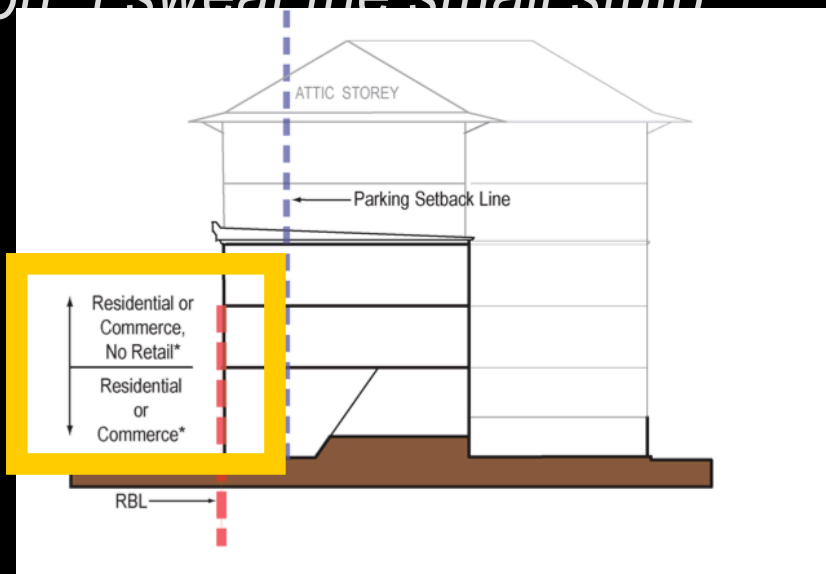
# Building Form: Uses

Some things are more important than others.

And for many things it is important to allow variety

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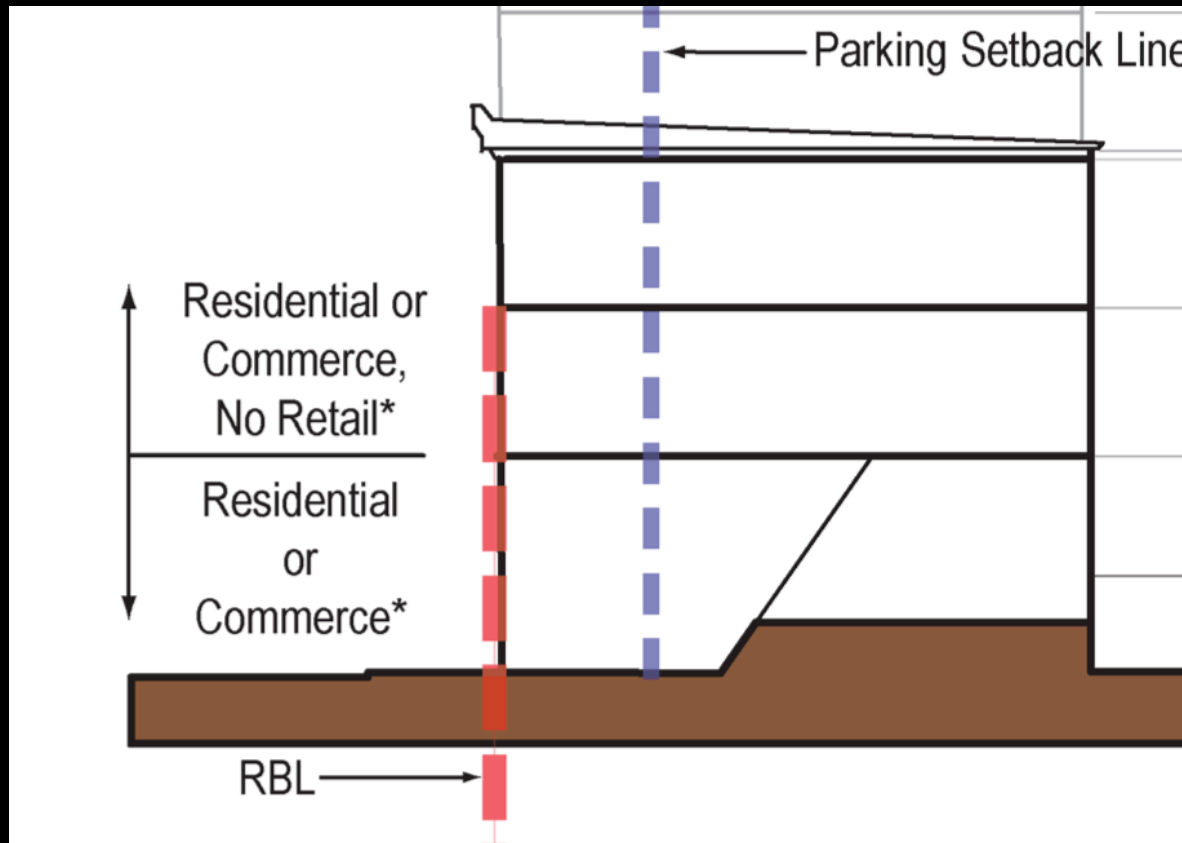
*(Don't sweat the small stuff)*



# Building Form: Uses

Form Based Codes versus Broad Categories

20<sup>th</sup> Century ZO Hyper-Control

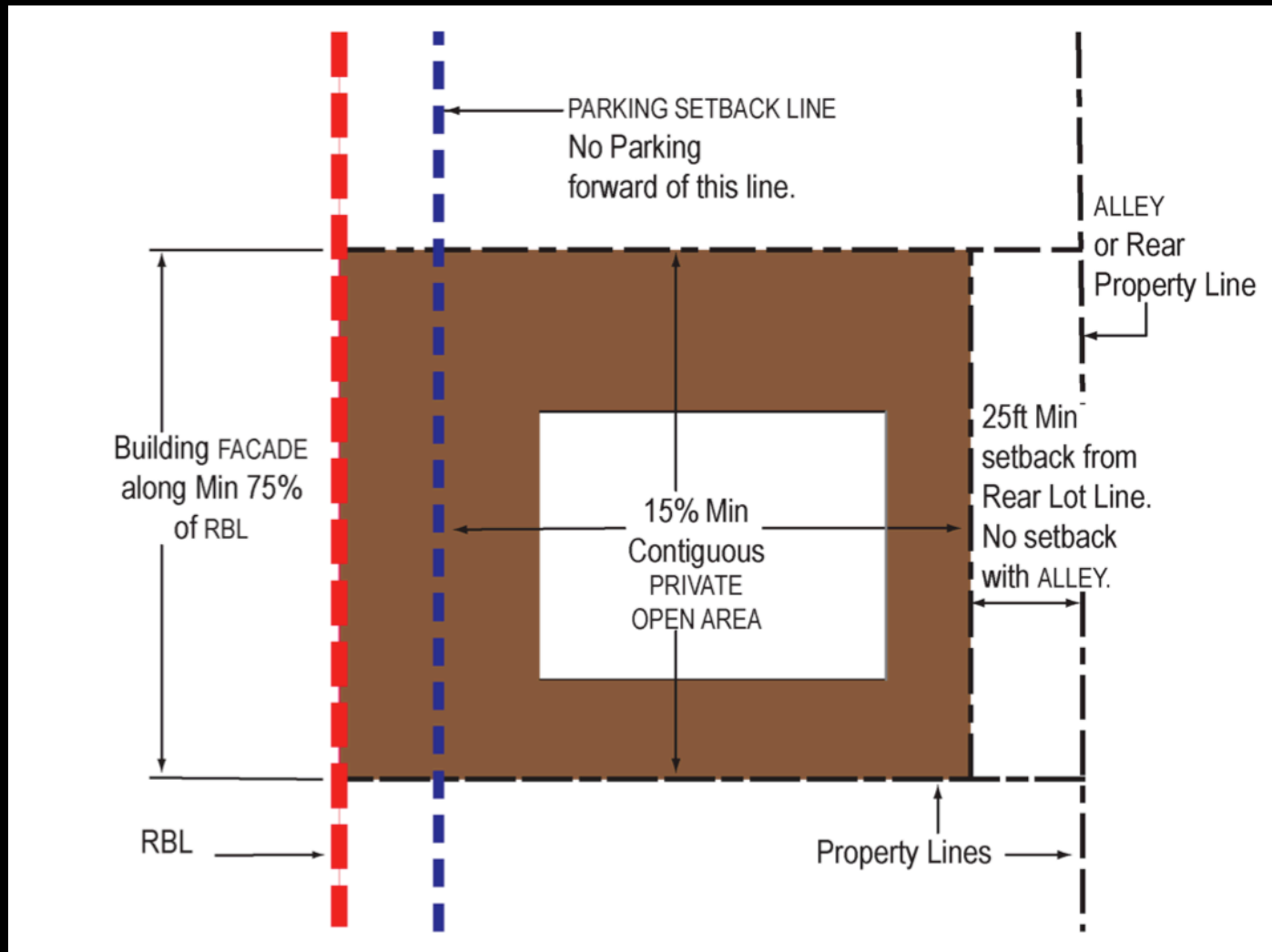


**Zoning Symbology**

Residential	Commercial	Design
R-O-S	C-A	R-L
O-S	C-O	R-S
R-A	C-R-C	R-M
R-E	C-S-C	R-U
R-R	C-1	L-A-C
R-80	C-C	M-A-C
R-55	C-G	E-I-A
R-35	C-2	<b>Village</b>
R-T	C-W	V-M
R-20	C-M	V-L
R-30	C-H	<b>Community</b>
R-30C	<b>Industrial</b>	R-M-H
R-18	I-3	R-P-C
R-18C	I-4	<b>Mixed Use</b>

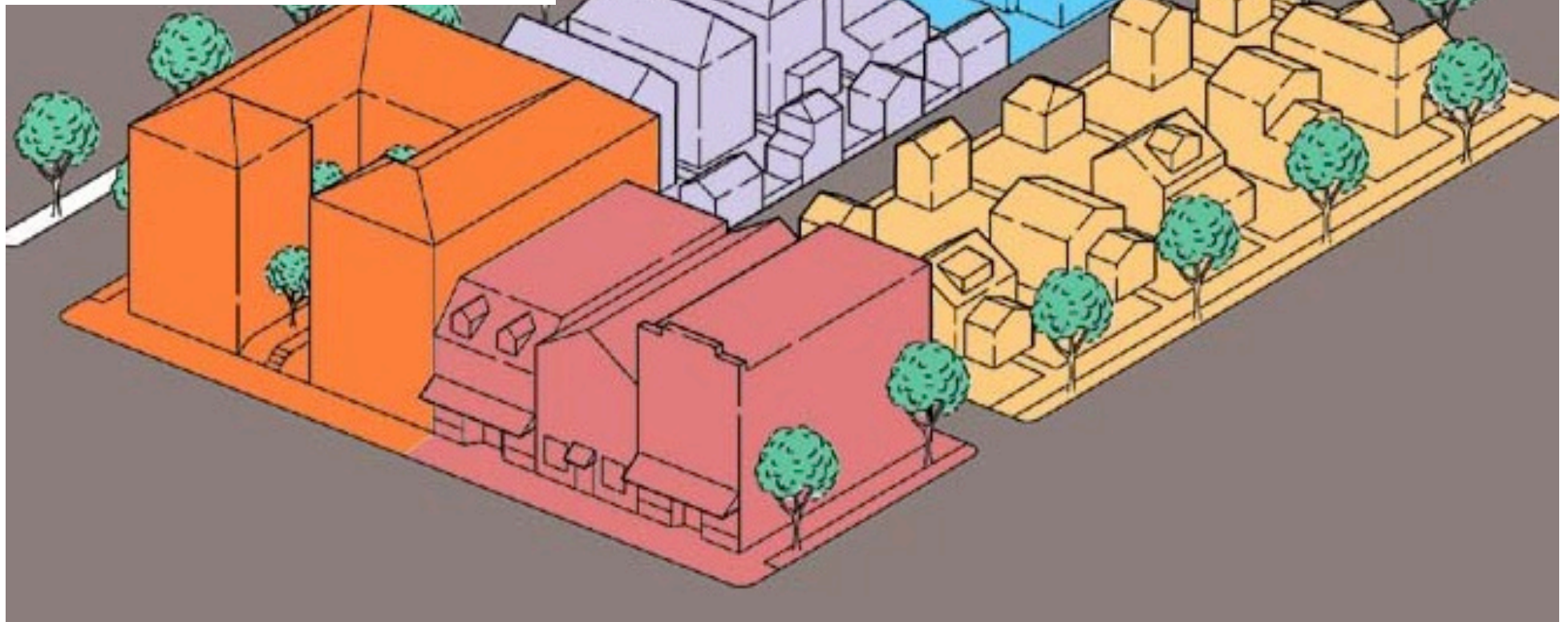
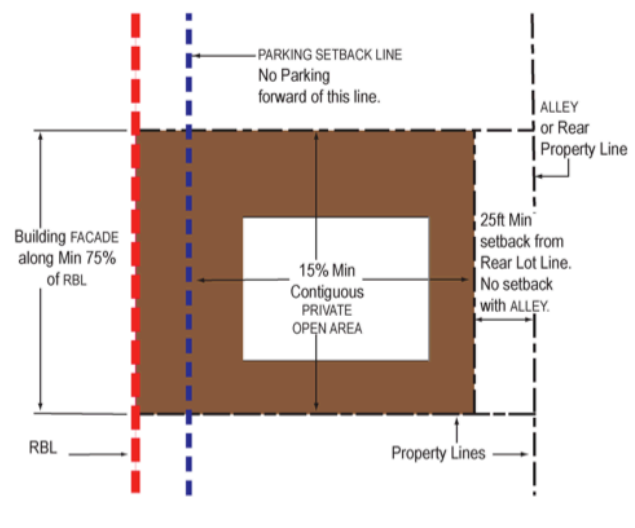
# Building Form: Block Interior

The buildings have to follow a few rules in order to get the synergy/advantages of a Block

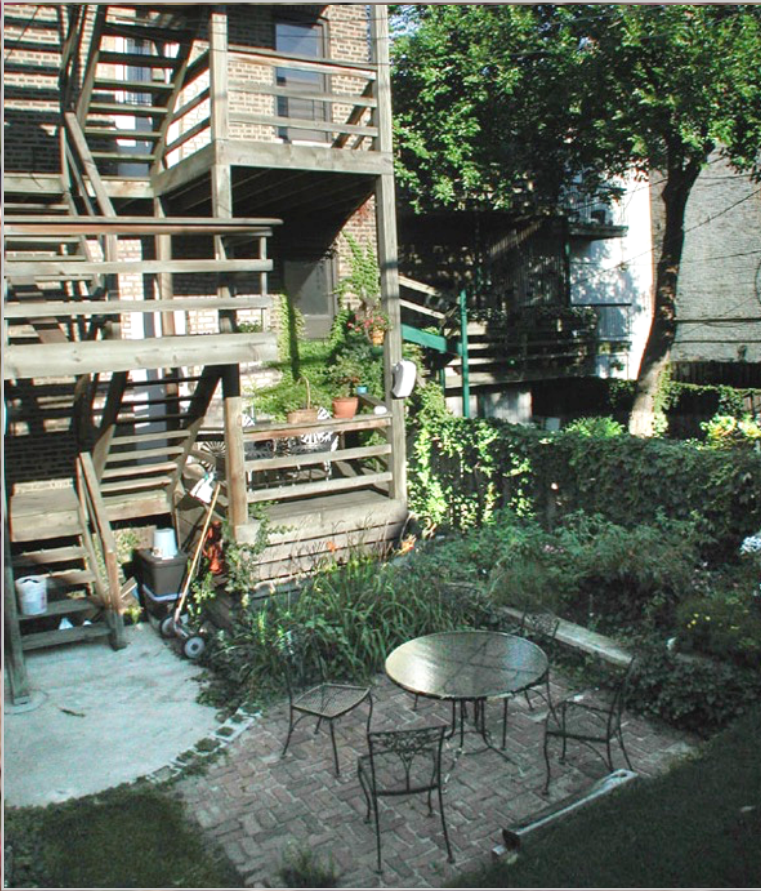
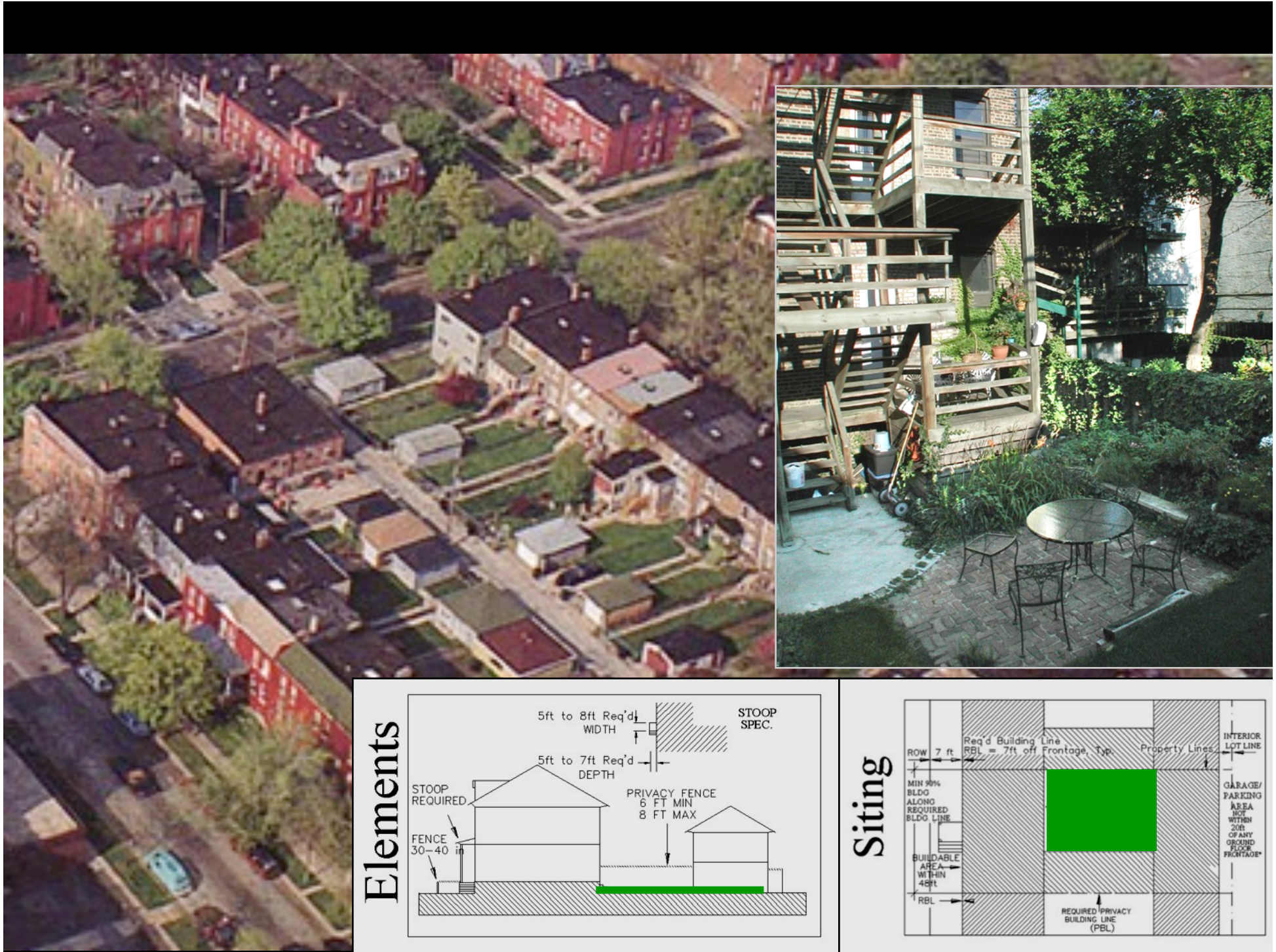




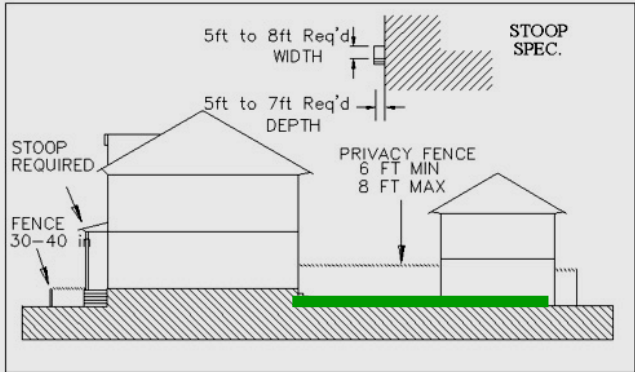
# Building Form: Block Interior



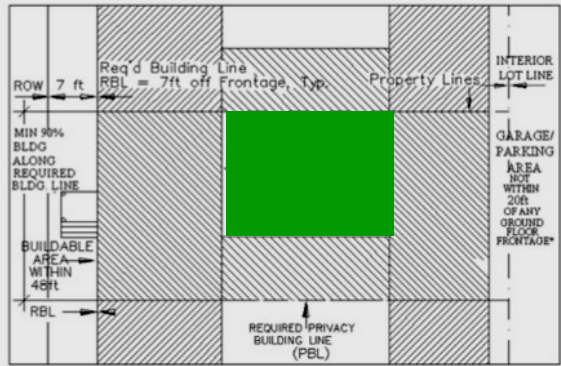


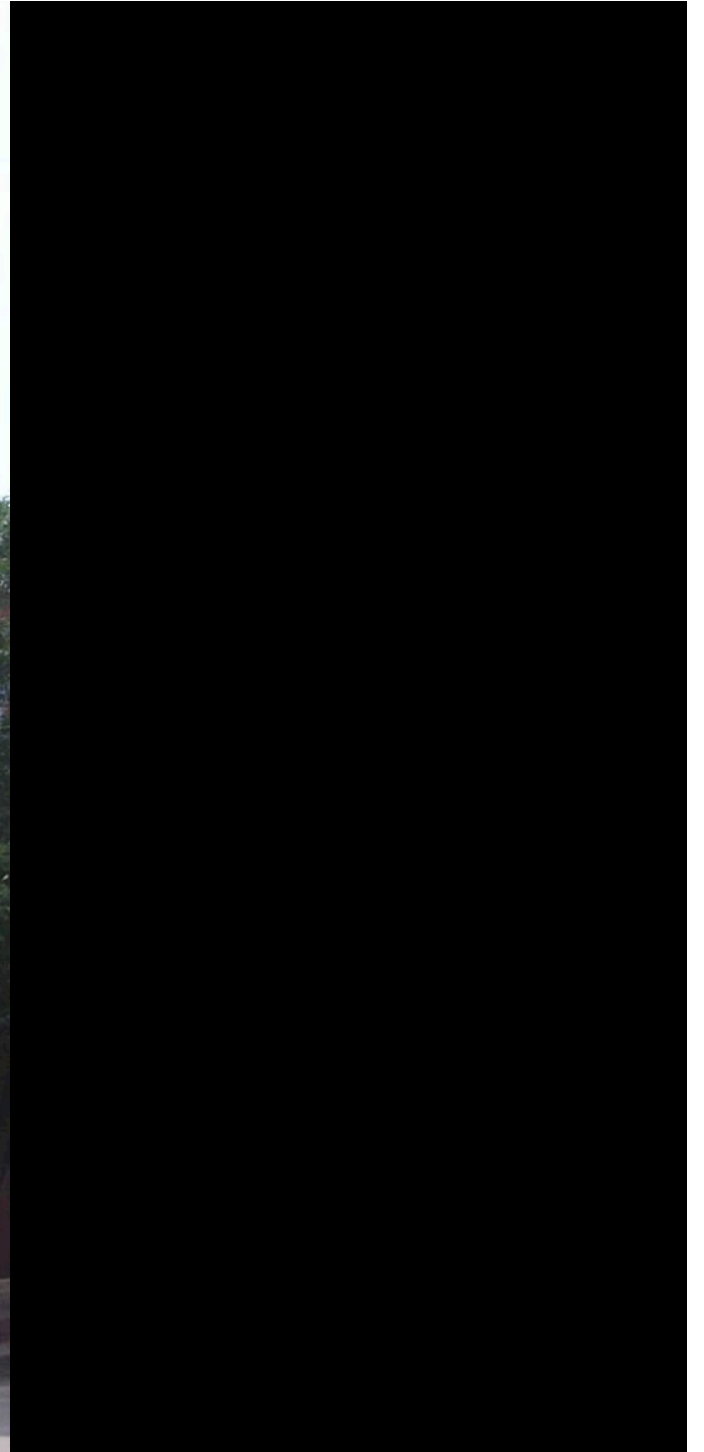


# Elements



# Siting





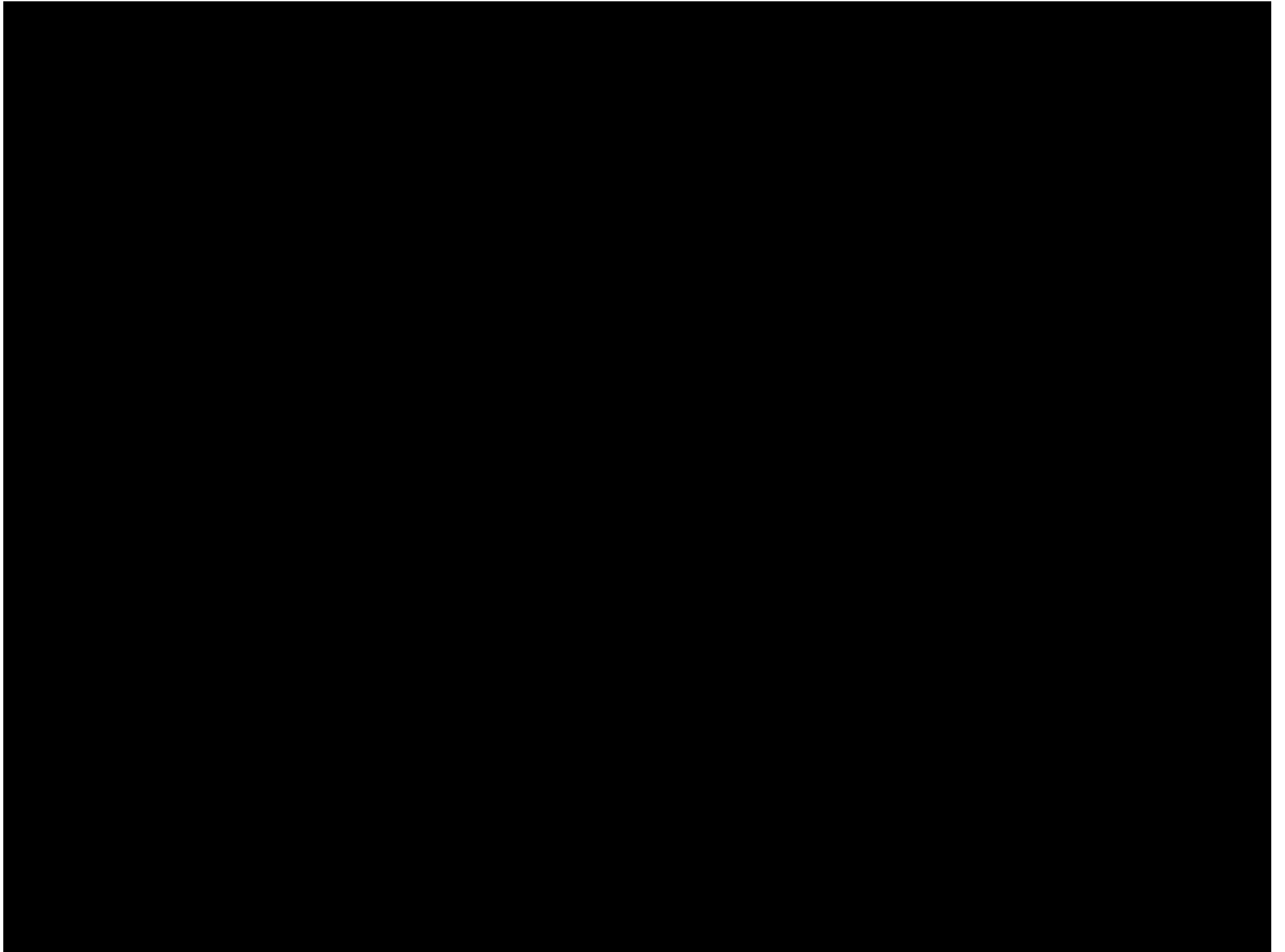


# Form-Based Coding Approaches

There are many different approaches:

1. Building Types
2. Street Types
3. Street Frontages
4. Smart Code and Transects
  - Frontage Types
  - Building Types

But don't be distracted or confused by the differences – they all are aiming for fundamentally the same place, limited by the same “police powers” & Constitution.



# Architectural Standards: *The 'dress code'*

- building materials
- windows & doors
- roofs
- walls & fences
- signs
- lighting and mechanical

## 6.6.6 Signage

### A. Intent and Guiding Illustrations

Signs along commercial frontages should be clear, informative to the public and should weather well. Signage is desirable for advertising form district shops and offices, and as decoration. Signs should be scaled to the nature of the district: mixed-use, pedestrian-oriented, with slow-moving automobile traffic. Signage that is glaring or too large creates distraction, intrudes into and lessens the district experience, and creates visual clutter. The illustrations and statements on this page are advisory only. Refer to the standards on the following page for the specific requirements.





# Redevelopment Site

















02/04/2010



What is the most  
fundamental aspect  
in a Form-Based  
Code?

*(Street-Space first)*

# Conventional *Land-Use & Density-Based* Coding



land use and density are highly regulated

# *Form-Based Coding* (Urban Form through Public Policy)



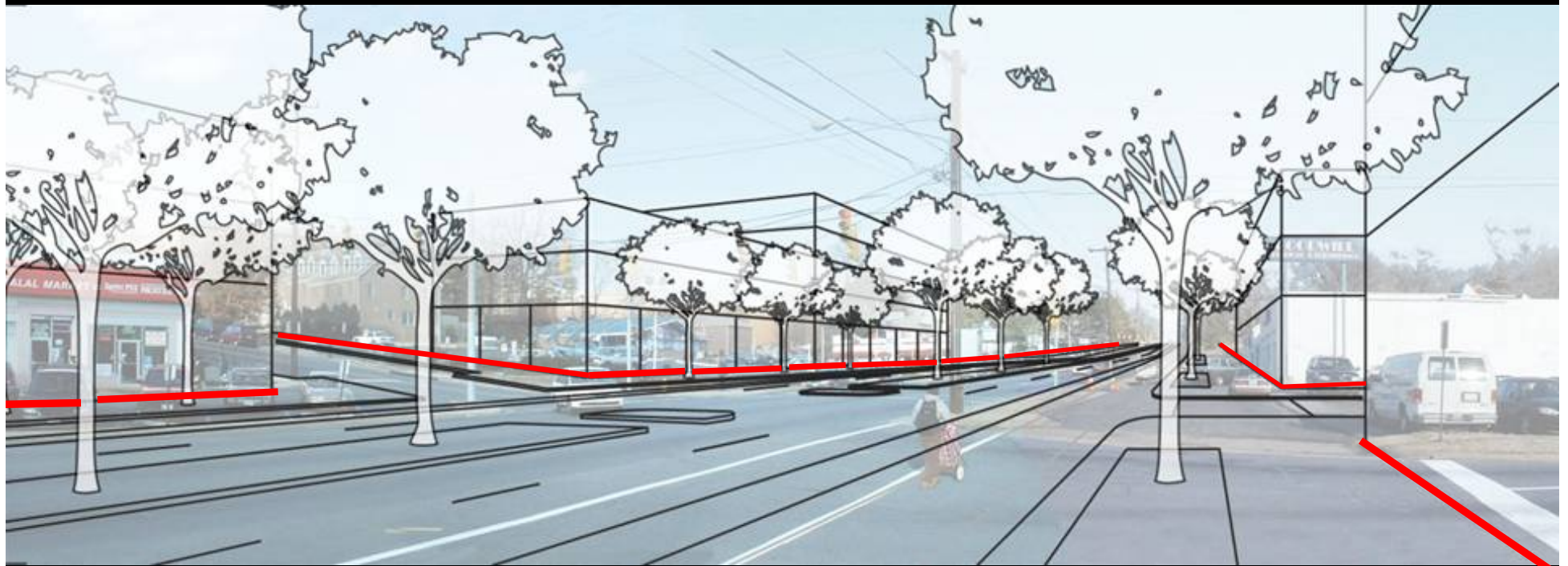
The Building *FACADE* is regulated to *form* the *Street-Space*

# *Form-Based Coding* (Urban Form through Public Policy)



The Building *FACE* is regulated to *form* the Street-Space

# Urban Form without Architecture



the private buildings form the public space

# Urban Form without Architecture



the public sector sets the rules

# FormBasedCodes.org

Urban Form *with* Architecture



the private sector builds