

Coding Tools

City of Iowa City
South District FBC

OPTICOS

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SECTION

1 Overview of Zoning Codes

Zoning already regulates Iowa City, the recommended option for how to zone South District is Form-Based Coding.

What types of codes are out there?

Conventional Zoning

- Focuses on the separation of uses and is nearly silent on physical form and character.
- Is unresponsive to existing walkable places.
- Uses blunt tools like Density + FAR, offering low predictability.

PD (Transactional)

- Focuses on the details of a specific project with little consideration for adjacent or future development.
- May or may not be responsive to walkable place.
- Uses blunt tools like Density + FAR, offering low predictability and requiring the neighbors to review each project.

Form-Based Coding

- Is focused on physical form + character and the public realm.
- Is specifically for walkable neighborhoods and centers.
- Uses actual building elements + terminology tailored to the community's expectations offering high predictability.

Photo Source: Shutterstock



What tools do these codes use?

Conventional Zoning

- Zoning focused on separation of uses.
- Density, Floor Area Ratio (FAR), maximum height, lot coverage, minimum off-site parking.
- Several rounds of review or hearings to compensate for lack of clarity or direction in the standards.

PD (Transactional)

- Specific site plan that may or may not suit future developers if unbuilt.
- Density and FAR.
- Negotiated enhancements better façade materials, increased setbacks in some areas to justify reduction in site planning standards.

Form-Based Codes

- Zoning focused on making a physical environment with a certain character.
- Important land development standards, creates intended physical environment.
- Building types with a form, footprint, + massing requirements.
- Select elements to shape streetscapes.
- Civic Space + Sign Types coordinated with each physical environment (zone).

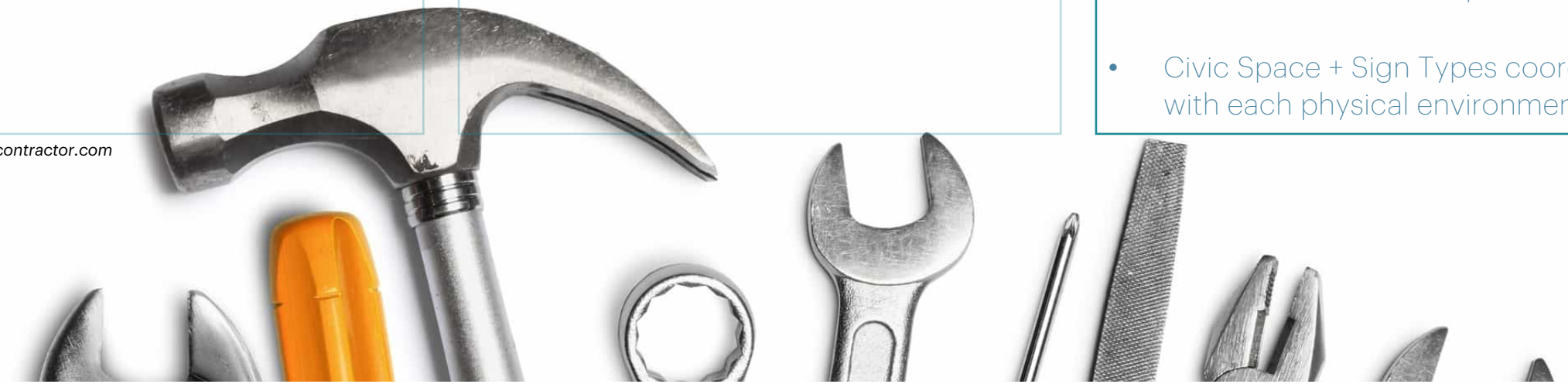


Photo Source: Roofingcontractor.com

Unintended consequences of these codes

Conventional Zoning

- Auto-dependent environments.
- Long commutes because of the segregation of uses.
- Contentious development process – low predictability of built outcomes.
- Typically more resistance from community as more as the project is built.
- Weak support of transit services.

PD (Transactional)

- Primarily auto-dependent environments.
- Long commutes because of the segregation of uses, but sometimes used for a walkable development.
- Contentious development process – low predictability of built outcomes, but sometimes walkable development.
- Typically more resistance from community as project is built.

Form-Based Codes

- Pedestrian-oriented environments.
- Variety of commute lengths because of more choices through variety and proximity.
- Simple development process – high predictability of built outcomes.
- Typically low to no resistance as more of the project is built.
- Support of transit services.









That's why we implement Form-Based Codes







Executed Vision

- Proactive community visioning.
- Keep what is already great about the place. Make each new investment contribute in precise ways that are compatible for the place.
- High quality public realm.



SECTION

2

Introduction to Form-Based Codes

Form-Based Codes begin with a high quality of public realm and offer high predictability about built form.

What is a Form-Based Code (FBC)?

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... It is a regulation, not a mere guideline."

Form-Based Code Institute



T4 Neighborhood Character

FBC – Principles

- **Emphasis**
  Mixed-use and mixed housing types
  Building form – it is as important as land use regulations.
- **Public Realm**
  Greater attention to streetscape, design and role of buildings.
- **Standards**
  Intentionally based on context or desired context.
- **Public Spaces**
  Design-focused, informed by existing conditions.



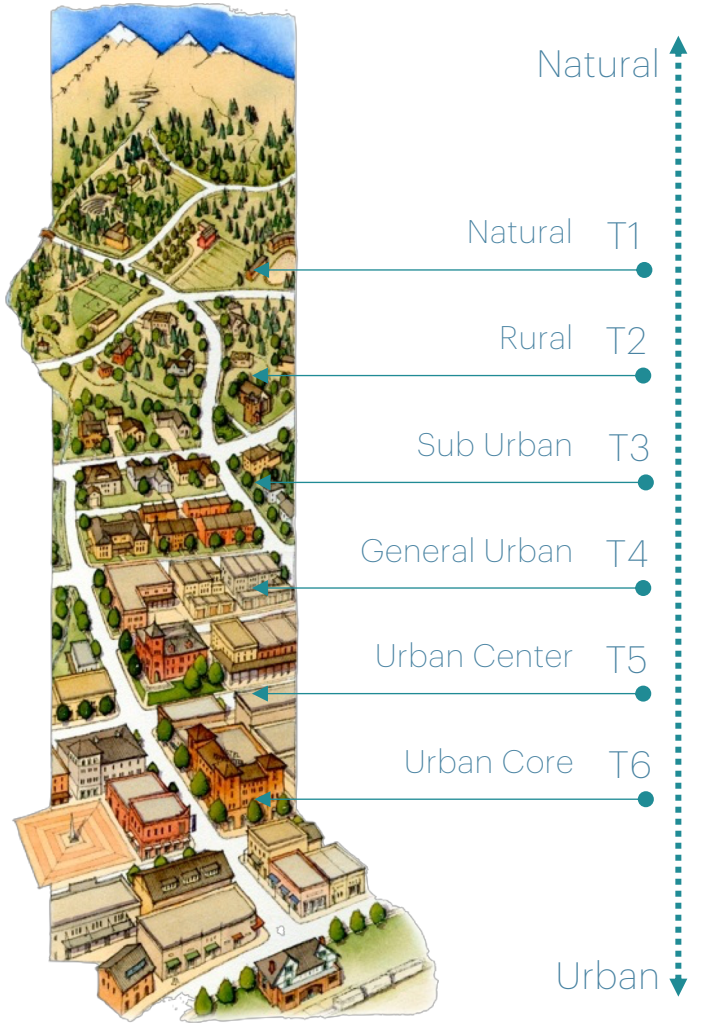
House-Scale vs. Building-Scale Buildings

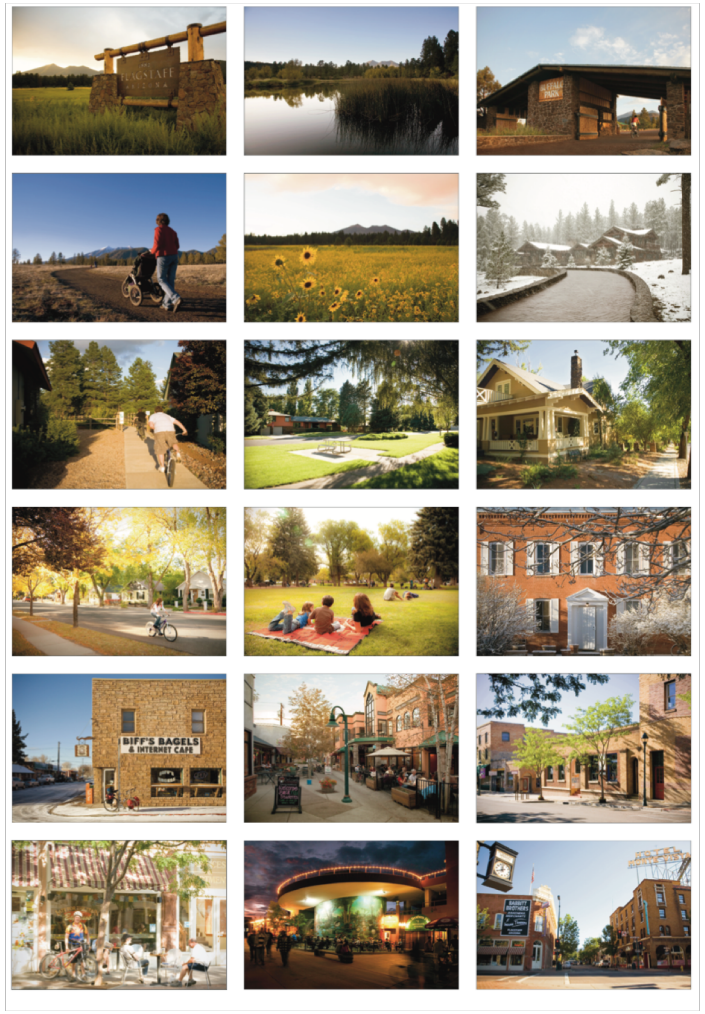
FBC – Organizing Principle

- **The Transect**

  The Natural-to-Urban Transect categorizes a spectrum of natural to urban contexts in six Transect zones (from the most rural T1 to the most urban T6) and is prominent organizing principle within Form-Based Code practice.

  Form-Based Codes replace zoning and are not merely design guidelines.





FBC – Required Components

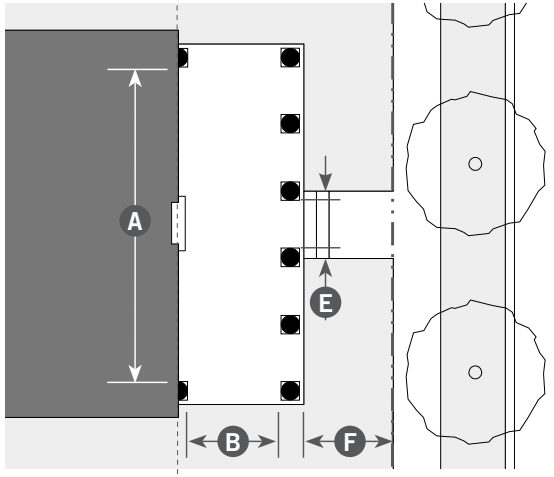
1. Regulating Plan

Map that assigns the code's zoning districts and various standards to physical locations and individual parcels.



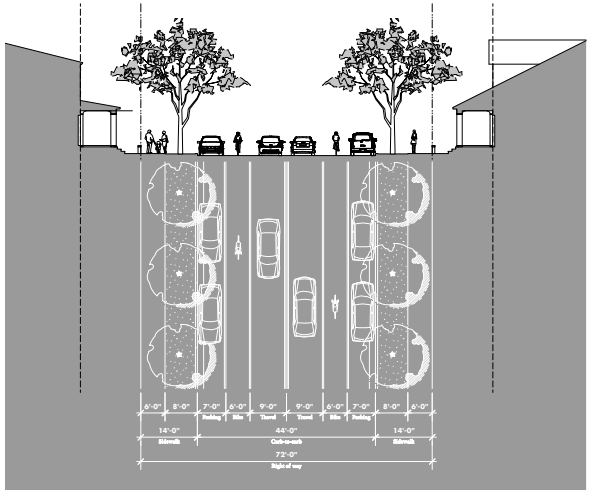
2. Building Form Standards

Regulate the physical and spatial interrelation-ships between buildings, and public + private spaces.



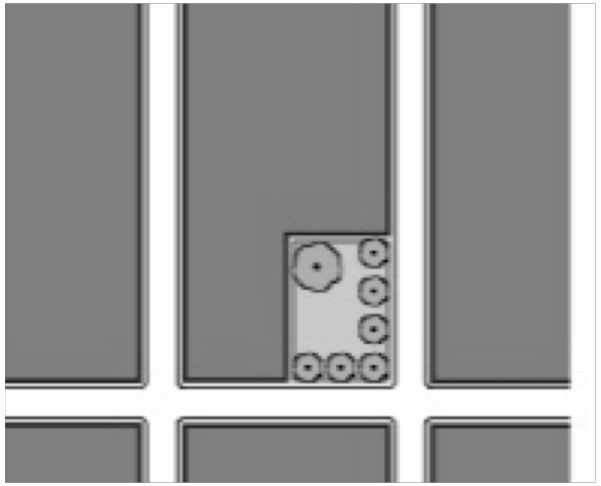
3. Frontage Type Standards

Positively shape how a building interfaces with the public realm.



4. Civic Space Standards

Regulations for individual civic spaces and their public realm elements.



5. Thoroughfare Standards

Specifications to individual streets and their elements coordinated with the public realm.

FBC – Required Components (1 of 5)

Regulating Plan

A map that assigns the code's zoning districts and various standards to physical locations and individual parcels.

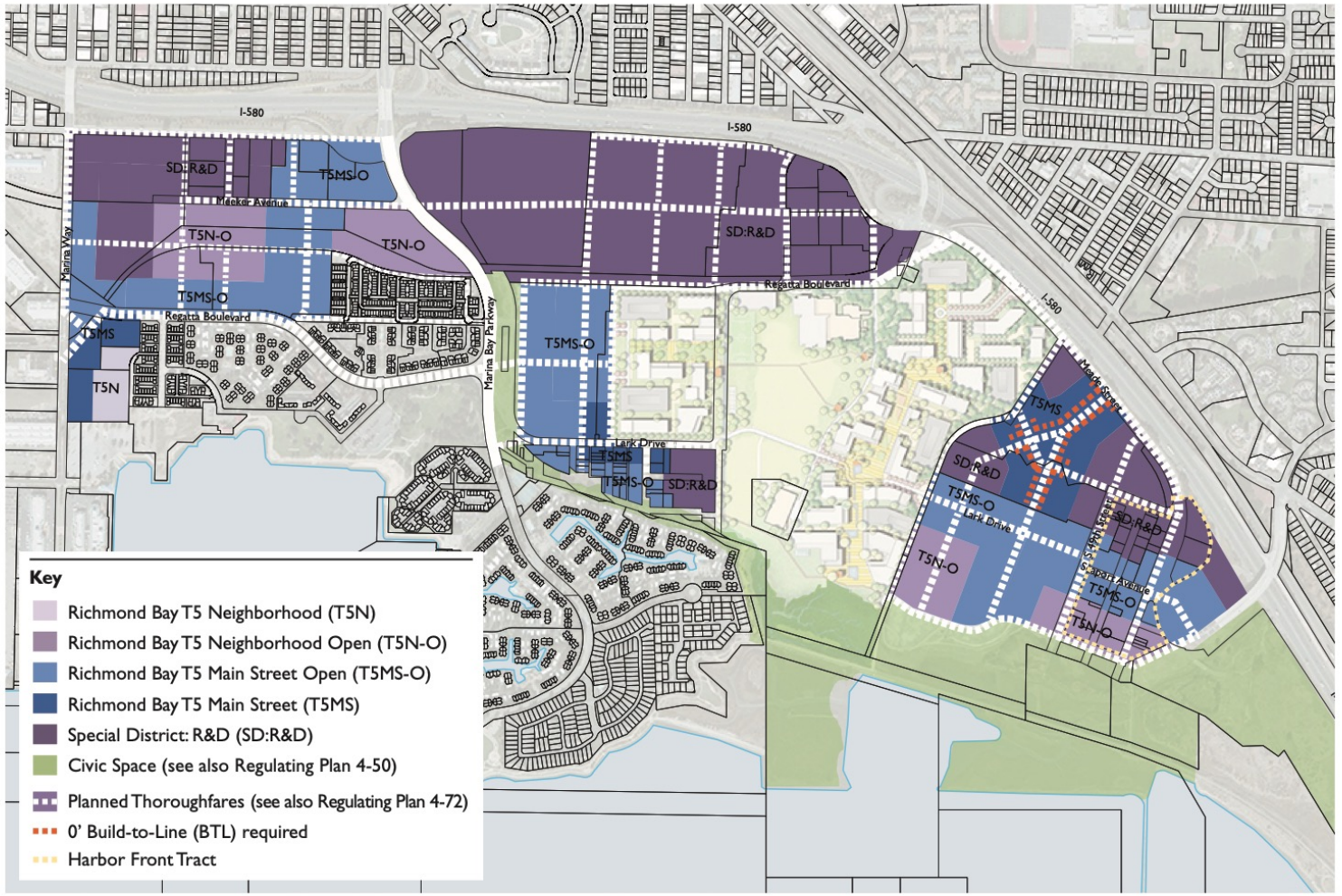
Why this map?

It goes beyond Conventional Zoning's information on use and height, and identify intended physical character and the zoning needed to generate it.

Different from Conventional Zoning because....

The map documents the intentions of the community vision by coordinating the various elements of each place to zoning and standards made to generate each place.

Transect Zone Regulating Plan



Regulating Plan with Planned Thoroughfares

FBC – Required Components (2 of 5)

Building Form Standards

Regulations for the physical and spatial interrelationships between buildings, public space, and private spaces.

Why these regulations?

To go beyond Conventional Zoning's information on building height and envelope, and articulate the footprint, scale, and placement of different types of buildings depending on the context.

Different from Conventional Zoning....

To provide a variety of built form while encouraging physical compatibility. This is especially important in low-to-moderate intensity neighborhoods where most if not all buildings are detached and have visible yards.



Example of T4 Neighborhood Character

FBC – Required Components (2a)

Building Form Standards:

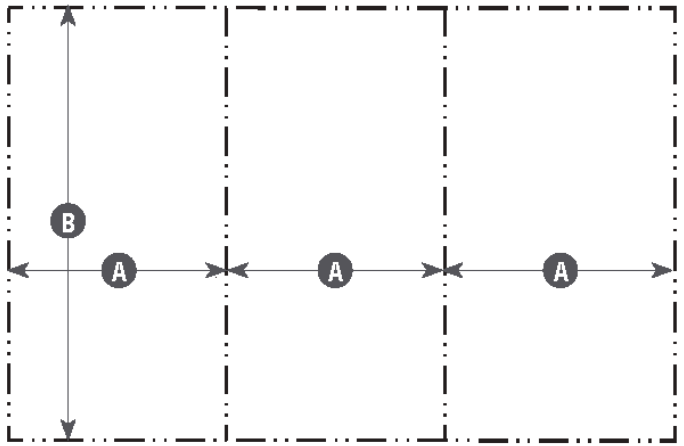
Lot Size + Building Types

Why?

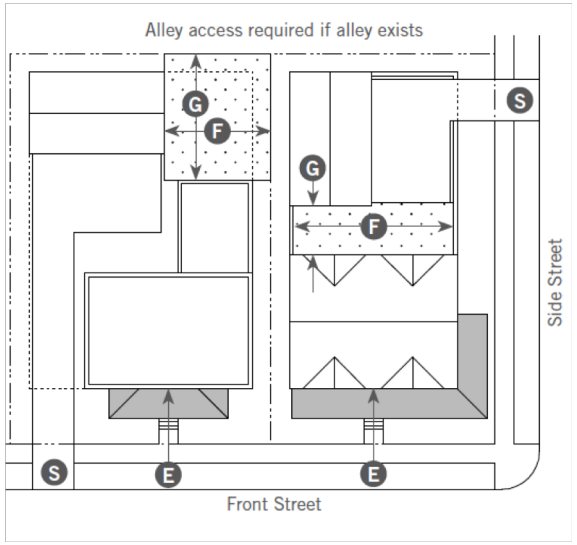
To coordinate the variety of building types in each zone with the lot width and depth that make each type function effectively.

How?

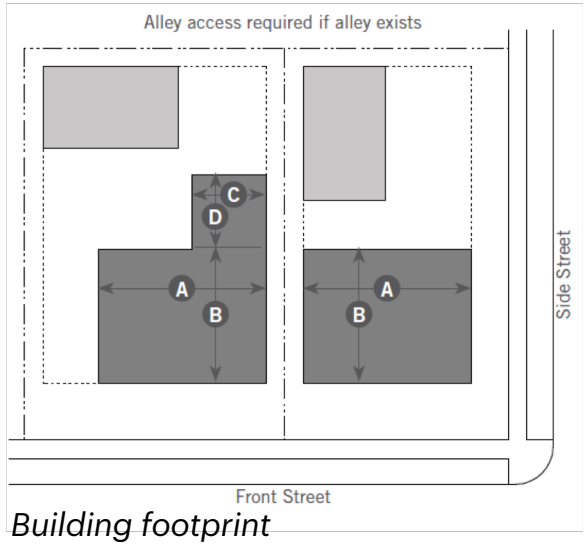
Translate building footprint size and any on-site open space needs into standards for each type. Then coordinate each of the parameters of each zone to ensure physical compatibility.



Lot Width and Depth



Pedestrian access, on-site open space



Building footprint

FBC – Required Components (2b)

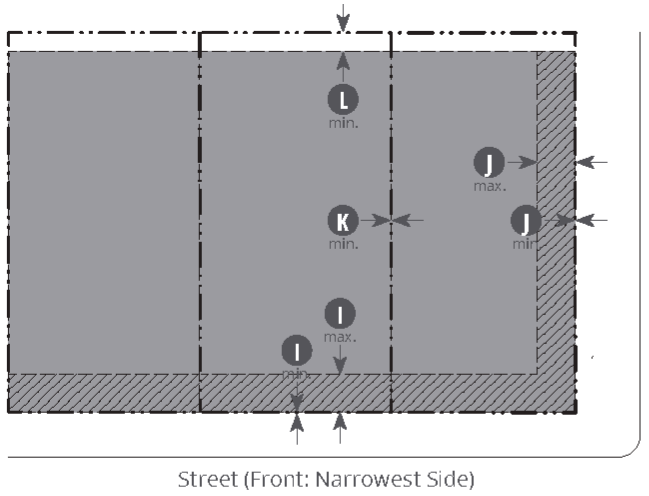
Building Form Standards:
Building Placement

Why?

To ensure that each building not create adjacency issues and to generate the overall physical character of attached or detached buildings, or both.

How?

Through standards for side and rear setbacks along with standards for where to place the front and street facades while allowing for creativity (façade zone).



Setback (Distance from ROW/ Building Site Line)		
Front (Facade Zone)		
Interior Building Site	7' min.; 10' max.	I
Corner Building Site	0' min.	
Side Street (Facade Zone)	5' min.; 10' max.	J
Side		
Main Building	5' min.	K
Accessory Structure(s)	5' min.	L
Rear		
Main Building	10' min.	M
Adjacent to R-2 Zone	15' min.	
Accessory Structure(s)	5' min.	N
Building within Facade Zone		
Front	70% min.	
Side Street	60% min.	

Setbacks and Building within Façade Zone



Photo Source: Google Maps

Building Placement

FBC – Required Components (2c)

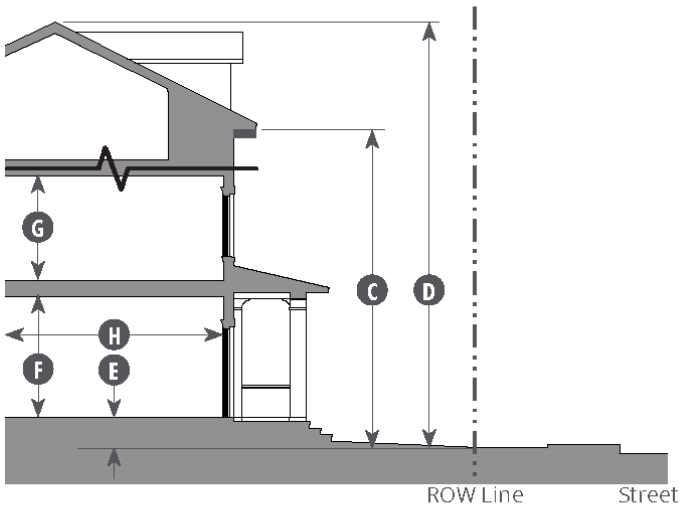
Building Form Standards:
Building Form

Why?

To ensure each building fits into the overall scale of each place/environment.

How?

Through standards for how high the ground floor needs to be raised, the height of ground floor and upper stories, and by measuring height to the highest eave to incentivize taller stories. Overall height is also measured.



Building height

D. Building Form		
Height		
Main Building		
Stories	4 stories max.[1]	
To Eave/Top of Parapet	45' max.	C
Overall	60' max.	D
4th story stepback of 30' min. required (all sides) when abutting or across street or alley from N.S zone or PUD.		
Accessory Structure(s)		
Carriage House	2 stories max.[1]	
Other	1 story max.	
Ground Floor Finish Level	18" min.[2]	
Above Sidewalk		E
Ground Floor Ceiling	9' min.[3]	F
Upper Floor(s) Ceiling	8' min.	G



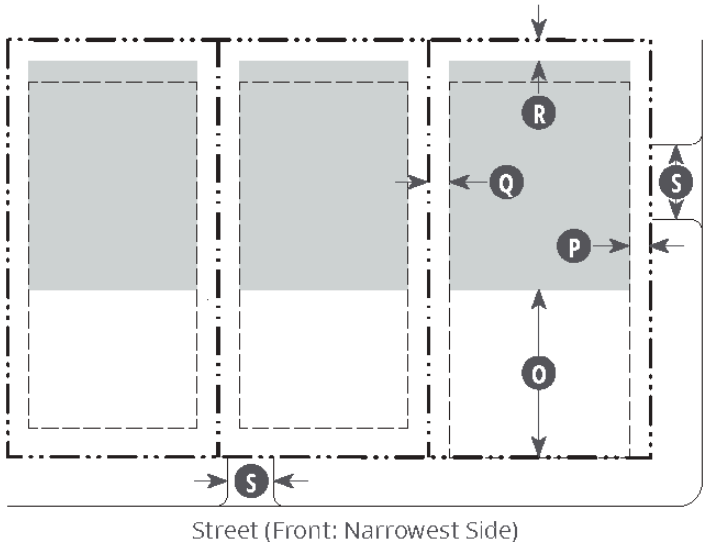
Building height configurations

FBC – Required Components (2d)

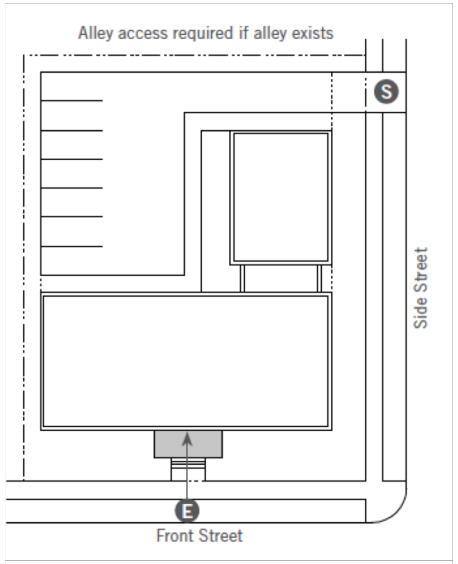
Building Form Standards:
Parking Placement

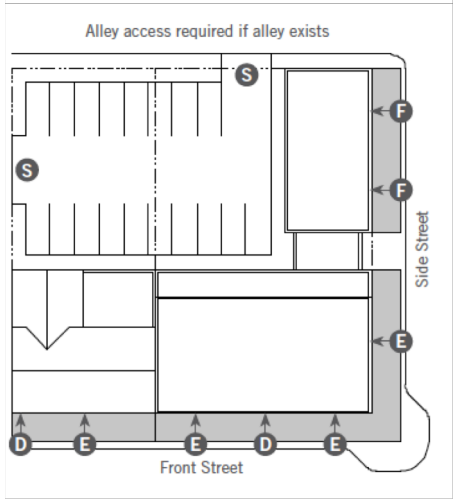
Why?
To ensure that the intended physical character is supported by locating the parking in the appropriate place(s).

How?
Through parking access and setback standards coordinated for each zone.



Parking location





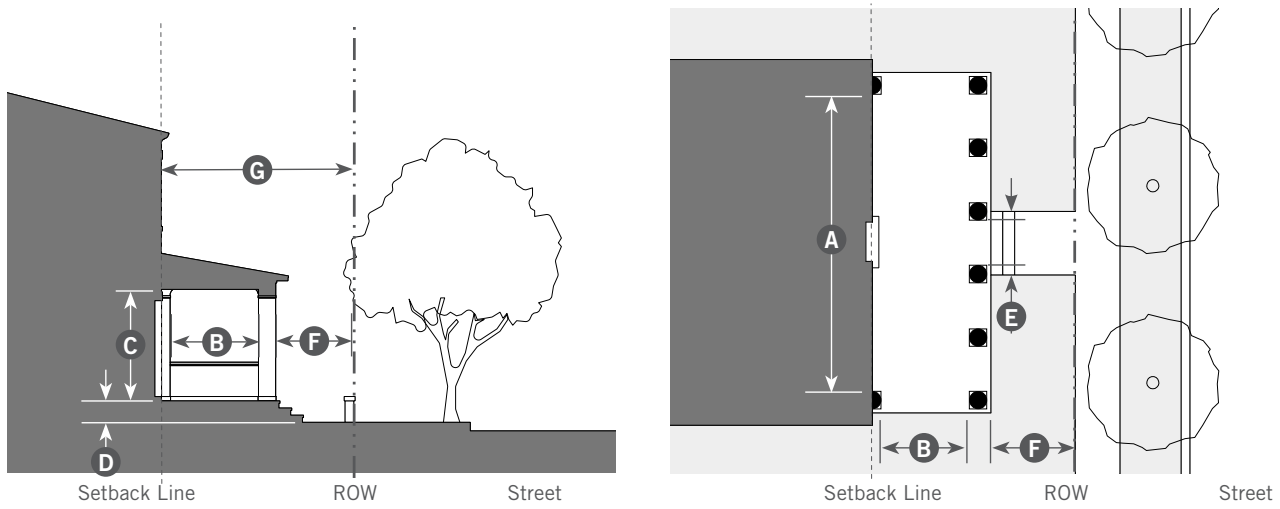
FBC – Required Components (3 of 5)

Frontage Type Standards

Why these regulations?

Regulations to positively shape the public realm. Frontages are on private property*, and are the essential connection between the buildings and the street.

*Except for Gallery and Arcade types which project over the public sidewalk.



Frontage Standards

Different from Conventional Zoning because....

Conventional Zoning doesn't have such standards and depends on architecture, street trees and landscaping which don't always produce a great public realm.



Frontage Type: Porch

FBC – Required Components (4 of 5)

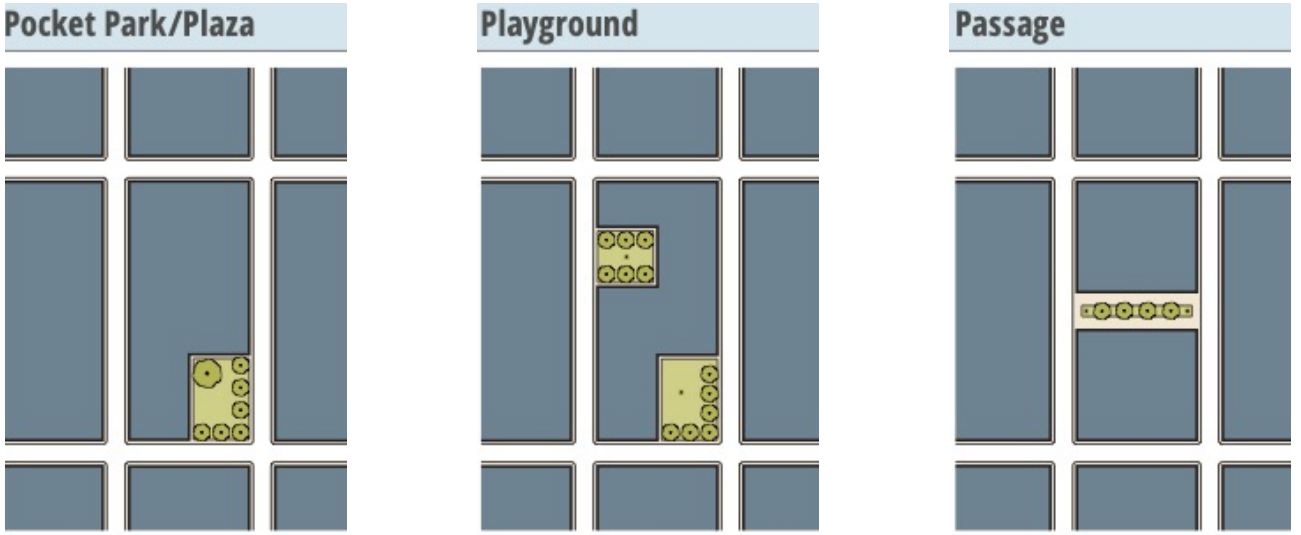
Public Space Standards

Why these regulations?

To provide a variety of destinations and public gathering areas in support of neighborhoods and center.

Different from Conventional Zoning because....

These Civic Spaces are in addition to natural open spaces and are sized and designed to the different sizes of neighborhoods and center, where Conventional Zoning sees open space primarily as general acreage.



Simplified diagrams



Civic Space Type: Pocket Park/Plaza

FBC – Required Components (5 of 5)

Thoroughfare Standards

Why these regulations?

To coordinate each block and its buildings with each type of thoroughfare to ensure that the thoroughfare supports the intended physical character and pedestrian-oriented environment.

Different from Conventional Zoning because....

Conventional Zoning typically does not coordinate with the blocks and lots each thoroughfare passes. Conventional Zoning treats Thoroughfares as car areas and does not typically adjust for the context.



T4 Neighborhood Character

FBC –Optional Components

1. Building Type Standards

House-Scale, Block-Scale, size, footprint, units per building.

2. Block Standards

Maximum block length and perimeter.

3. Architectural Standards

Façade composition, specific elements, style.

4. Sign Standards

Variety of sign types based on the zone.

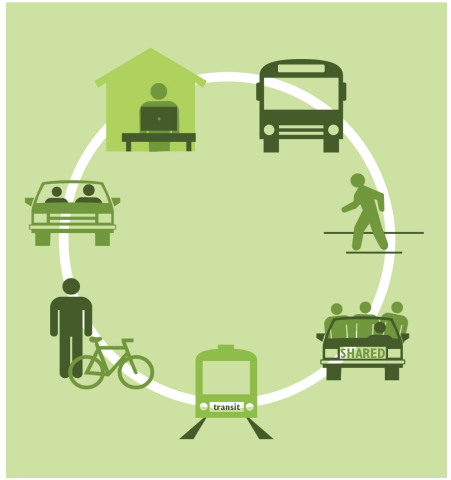












Simplified diagrams

FBC – FBC Scales of Application

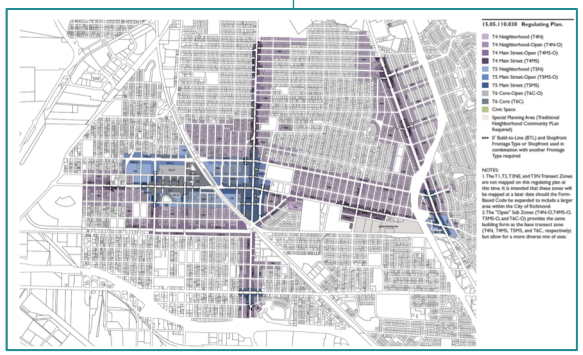


Downtown Davis

Site Specific

This type of code applies Form-Based Zones and standards to one area in a community.

Example: Downtown

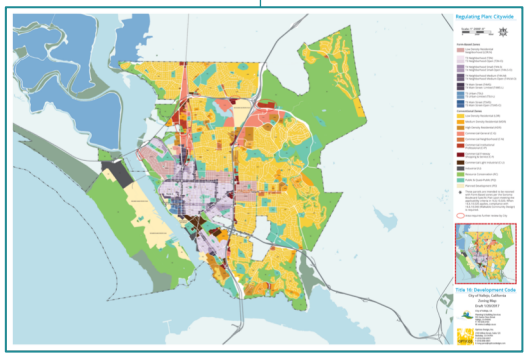


Richmond Corridors

Multiple Sites

This type of code applies Form-Based Zones and standards to several areas in the community.

Example: Downtown and 3 Corridors

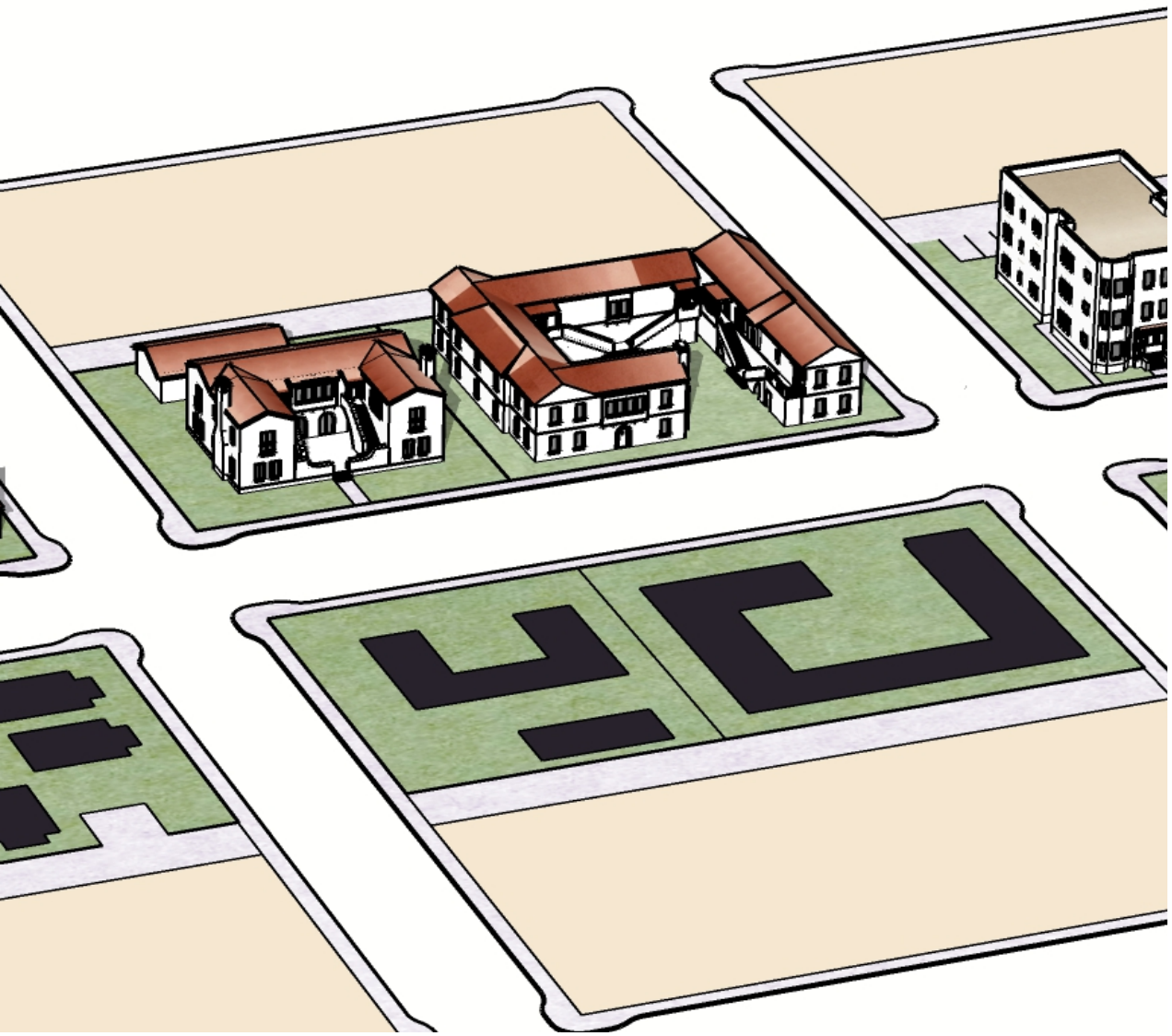


Vallejo

Citywide

This type of code applies Form-Based Zones and standards to some of the community and applies conventional, use-based zoning to the other areas of the community.

Example: Entire City



SECTION

3

Introduction to Building Types

Building Types provide a palette of built form and housing options to best articulate neighborhood design and physical transitions.

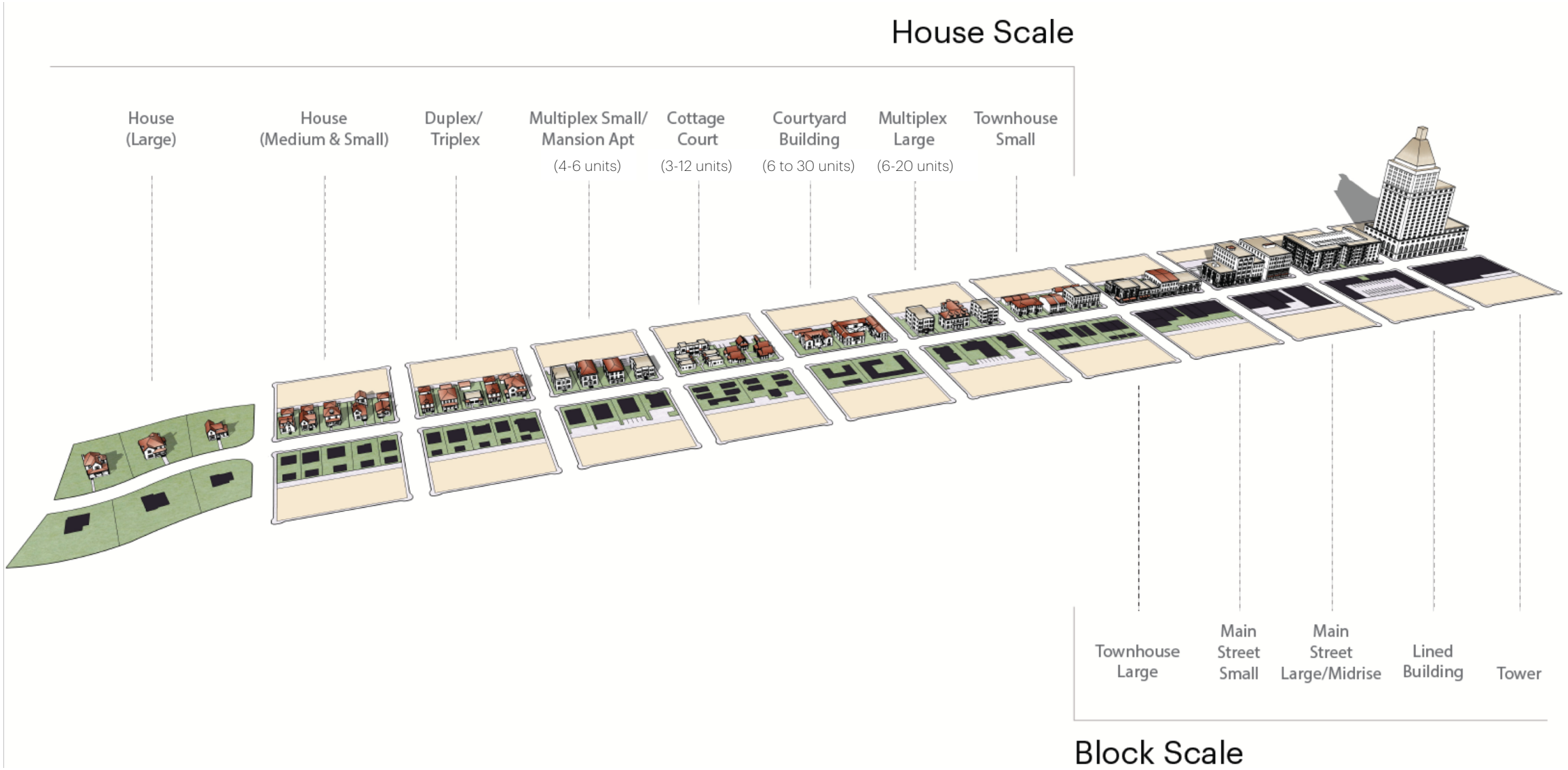
Why include Building Types?

- Provide a **clear + predictable** range of outcomes and expectations for neighbors /builders.
- Better articulate **transitions** in scale and intensity.
- Avoid density, max height, + F.A.R., which are blunt and unhelpful in neighborhoods.
- Directly identify **allowed + not allowed** in each context.

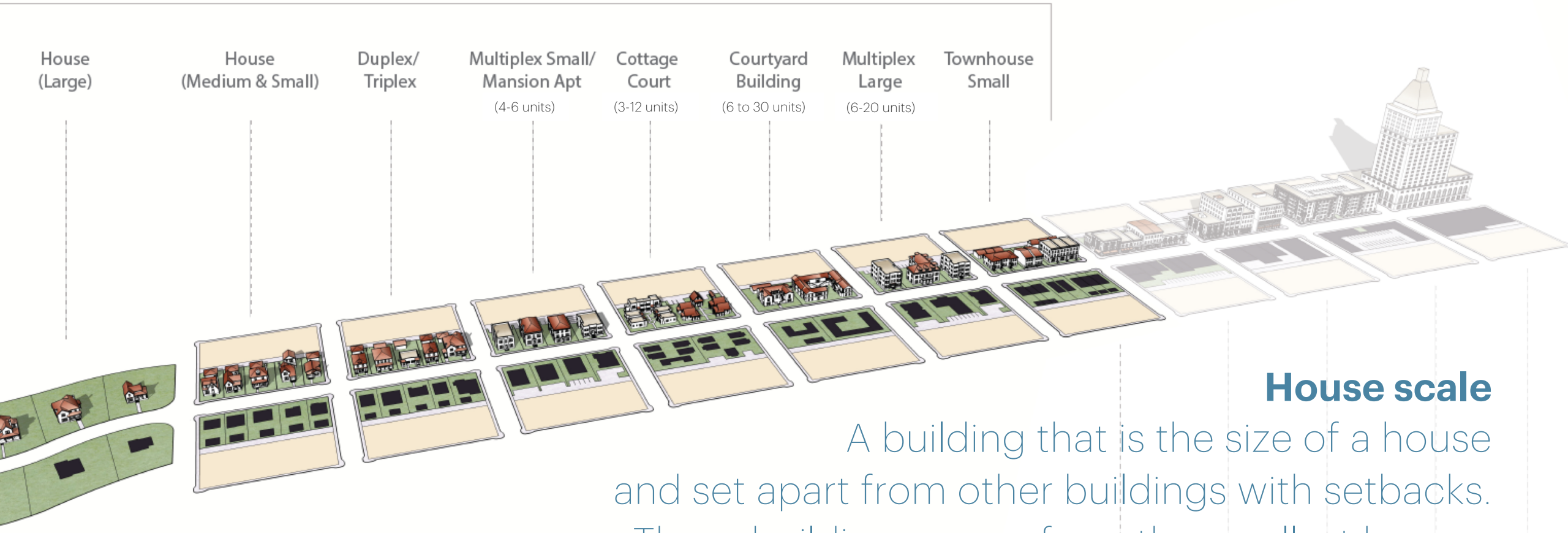


Photo Source: Shutterstock

Building Types



Building Types



House scale

A building that is the size of a house and set apart from other buildings with setbacks. These buildings range from the smallest houses to the largest houses in a community.

Building Types – House Scale



House (Large)





House (Small/Medium)





Duplex/Triplex





Multiplex Small (4 to 6 units)





Cottage Court (3 to 12 units)





Courtyard Building (6 to 30 units)





Multiplex Large (6 to 20 units)





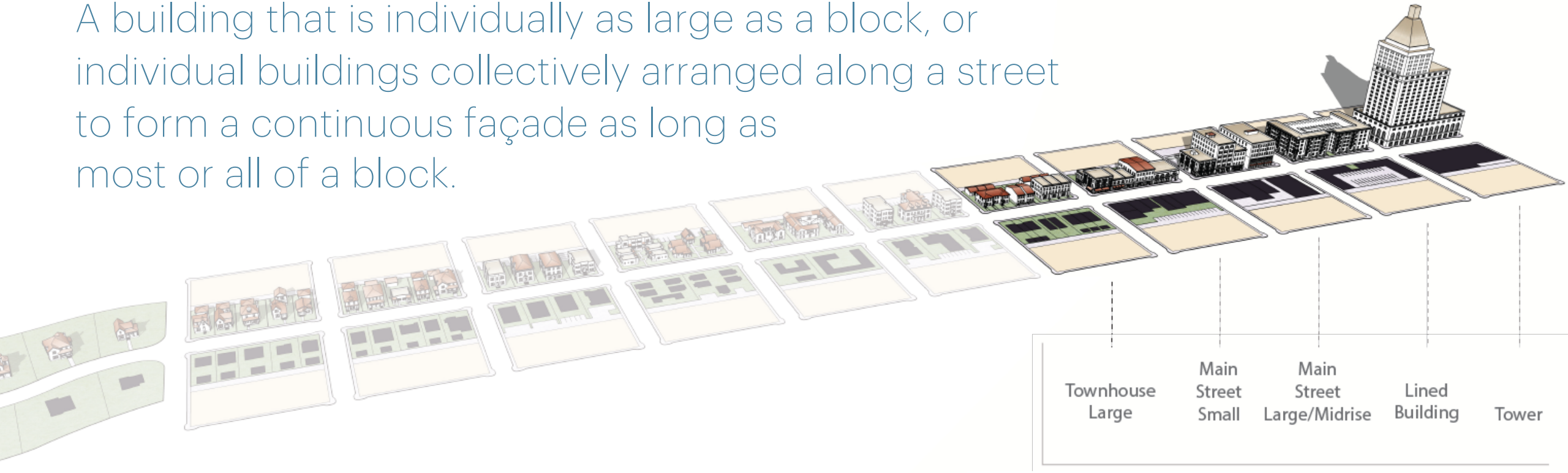
Townhouse (Small)



Building Types

Block Scale

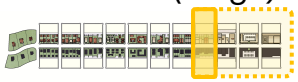
A building that is individually as large as a block, or individual buildings collectively arranged along a street to form a continuous façade as long as most or all of a block.



Building Types – Block Scale

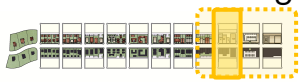


Townhouse (Large)





Main Street Building (Small)



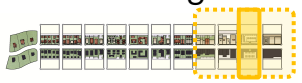


Main Street Building (Large)





Lined Building





Tower





SECTION

4

Introduction to Missing Middle Housing

Missing Middle Types are House-Scale buildings that range from duplexes with only two dwelling units to courtyard buildings to small apartment buildings with multiple dwelling units.

MISSING **MIDDLE** HOUSING

What is the situation?

- 75 – 85% households without children by 2025.
  (US Census Bureau)
- Need smaller houses, and more of them.

> It's time to rethink and evolve, reinvent and renew."
>
> — Urban Land Institute
> *What's Next*



Photo Source: cellcode.us

What is Missing Middle Housing (MMH)?



Missing Middle Housing is a range of **multi-unit or clustered housing types** compatible with single-family homes. They are compatible with small homes that help meet the growing demand for livable communities.

MMH – Characteristics

- Located in **walkable contexts.**
- **Compatibly-located** with single-family homes.
- Provide **small, well-designed units.**
- Create a strong **sense of community.**
- Foundation for **diverse housing options.**



Carriage House: Dwelling over garage

Missing Middle Distributed



Missing Middle distributed throughout neighborhood.

Missing Middle As Transition



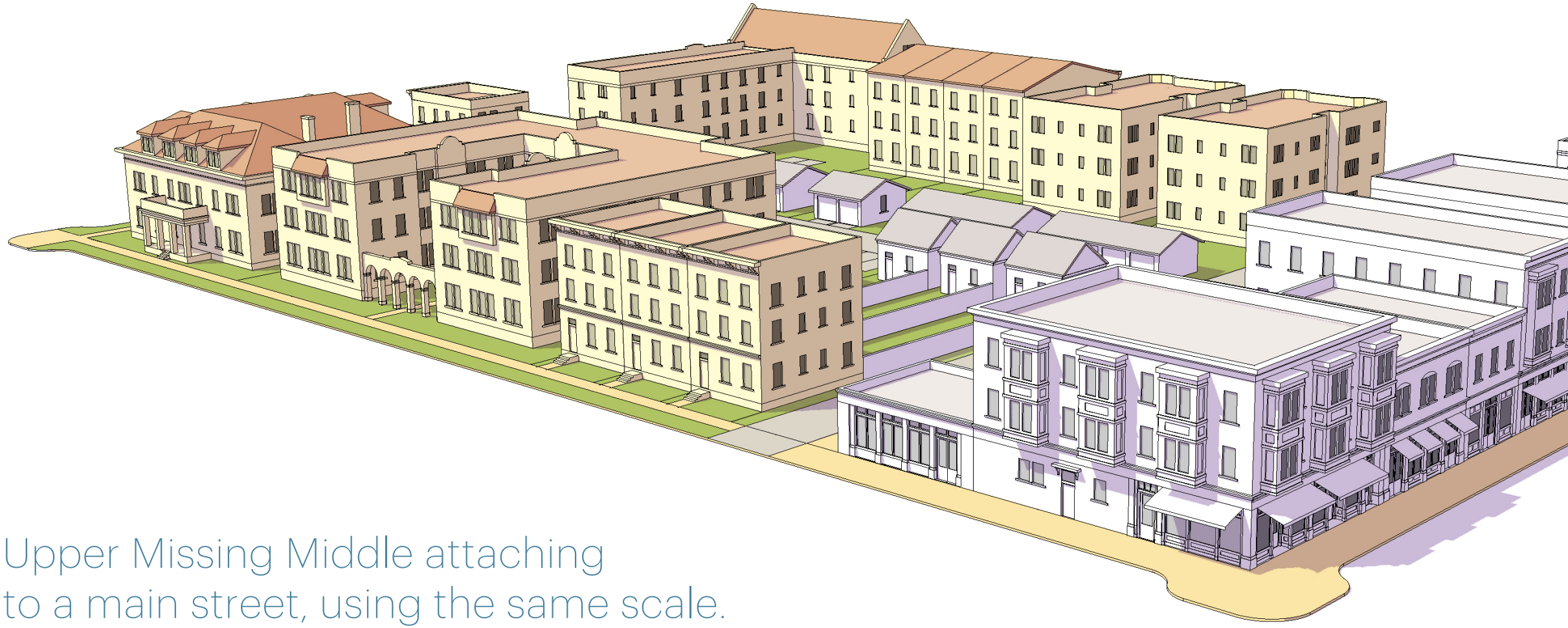
Missing Middle as transition
between neighborhood and corridor.

Missing Middle Connecting



Missing Middle connecting
a single-family neighborhood and a main street.

Upper Missing Middle Attached



Upper Missing Middle attaching
to a main street, using the same scale.



Introduction to Frontages

SECTION 5

Frontage Types provide a palette of physical elements that engaged each building façade with the public realm.

Why include Frontages?

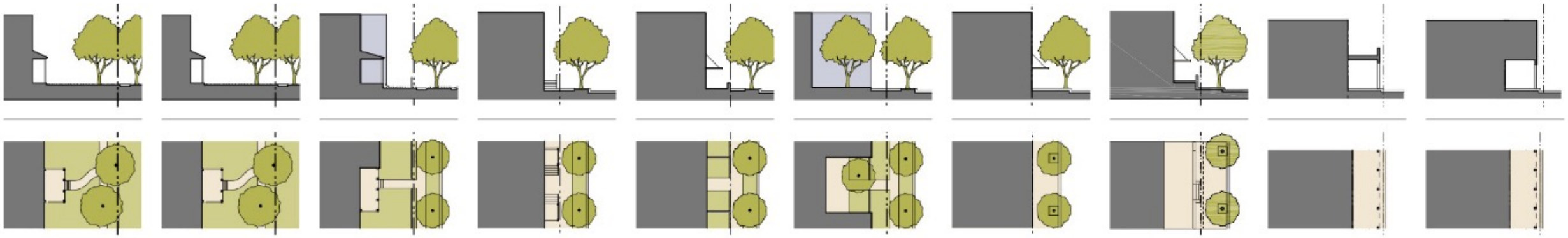
- Provide a range of ways to **shape** the streetscape depending on the context.
- Articulate **transitions** from one context to another.
- Ensure all buildings are **pedestrian-oriented** and ensure the ground floor contributes visually to the pedestrian nature of the streetscape (no blank walls).



Photo Source: pgnimg.com

Frontages

Types



Front Yard | Porch: Projecting | Porch: Engaged | Stoop | Dooryard | Forecourt | Shopfront | Terrace | Gallery | Arcade

More Private ◄------► More Public

Frontages Types

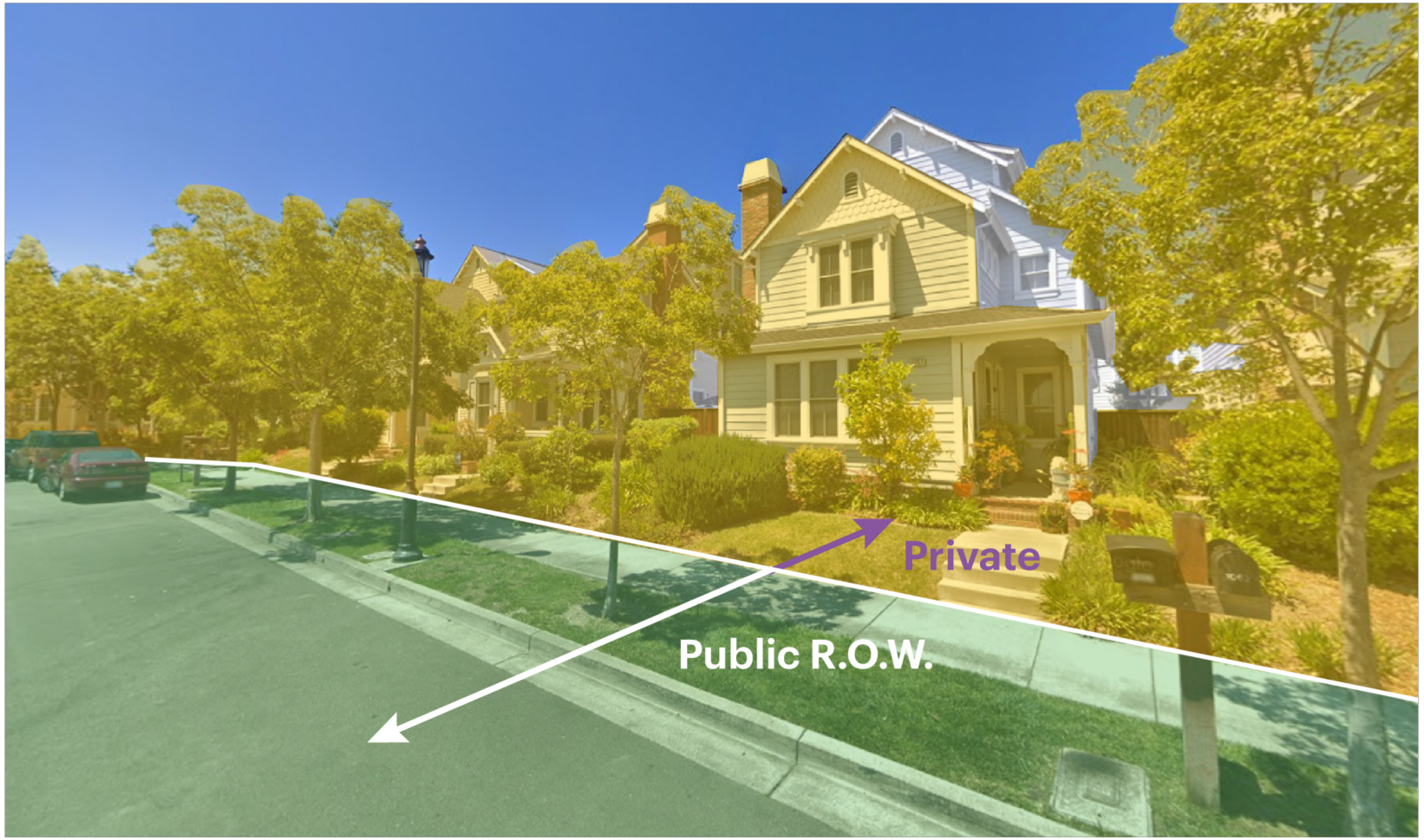
Frontages are important from low-intensity to high-intensity buildings and physical contexts.

Each frontage type profile provides a classification of form, description of the type, the transect zones it's typically found in, and its typical characteristics.



Frontage Type: Porch Projecting

Relationship between Private + Public



Private and Public Right-Of-Way diagram

Frontage Types – More Private



Front Yard



Porch: Projecting



Porch: Engaged



Stoop



Dooryard

Frontage Types – More Public



Forecourt



Shopfront



Terrace



Gallery



Arcade



SECTION

6

Additional Resources

Opticos is a thought leader in Urban Design, Architecture and Form-Based Coding.

Additional Resources – Opticos Research

Here at Opticos, we are always moving our research forward.

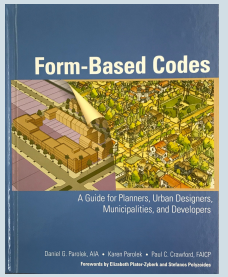


See our latest work and thought leadership:
http://opticosdesign.com

Opticos Blog:
https://opticosdesign.com/blog/

Study up on Missing Middle Housing:
http://missingmiddlehousing.com/category/the-types/

Discover our progress in published work:



Additional Resources – Planetizen courses

Website – https://courses.planetizen.com/instructor/daniel-parolek

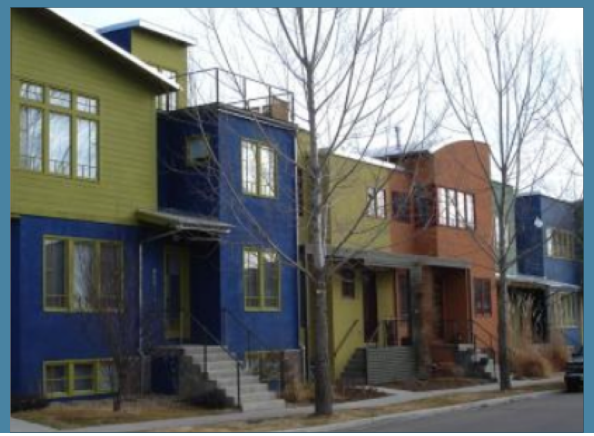
FBC 101 – Preparing a FBC
This course explores basic questions and decisions to consider when preparing a form-based code. It also covers the different approaches to regulating urban form and provides guidance for selecting an organizing principle for your form-based code. Finally, the course explains the visioning and creating of a plan, followed by drafting, testing, and assembling your code.



FBC 101 – Legal Aspects
This course explores the legal issues of creating and using a form-based code.



Missing Middle Housing
Learn about Missing Middle Housing and how to integrate these types into existing neighborhoods.



FBC 101 – Neighborhoods
This course introduces the essential elements of neighborhoods.



Additional Resources – Planetizen courses

Website – https://courses.planetizen.com/instructor/tony-perez

FBC 101 – Introduction

This course defines form-based codes, explains why they were invented, and distinguishes them from conventional "use-based" zoning ordinances—all with an emphasis on placemaking and walkability. This course will provide an overview of the development of form-based codes, their mandatory and optional component parts, and the importance of making form-based codes context or place-specific.



FBC 101 – Learning How to Look

This course will teach you the skills to appreciate and analyze the measures and functions of good urbanism.



FBC – Using Building Types, Part 1

Learn about building types in the context of form-based coding and how building types can be direct way to achieve compatible and more predictable built results.



Frontage Types and Public Realm

This course reviews the 10 primary frontage types and how each shapes the public realm. This course focuses on understanding the features and distinctions of each type and in which locations or contexts each is appropriate.



Thank You.

