

Form-Based Code Organizing Principles



April 4, 2008

Bill Spikowski --- Spikowski Planning Associates
 Geoffrey Ferrell --- Ferrell Madden Lewis LLC
 Sandy Sorlien --- SmartCode Principal Editor

Purpose of form-based codes:

To carry out a physical plan for a place

START WITH:

- an elegant urban design plan

GOAL:

- The most easily understood code that can carry out this plan

HOW?

HOW?

- Form-based codes are reinventing methods that local governments can use to regulate the scale, form, and intensity of land development.
- This is a fertile period of experimenting with new coding techniques

Form-Based Codes



A Guide for Planners, Urban Designers, Municipalities, and Developers

Daniel G. Parolek, AIA • Karen Parolek • Paul C. Crawford, FAICP
 Forewords by Elizabeth Plater-Zyberk and Stefanos Polyzoides

Building Type-Based



4.2.2 Building Typing and Building
 Building typology and building form are critical to the success of form-based codes. Building typology is the classification of buildings based on their form and function. Building form is the physical shape and appearance of a building. Building typology and building form are used to regulate the scale, form, and intensity of land development.

1. Building Typology
 Building typology is the classification of buildings based on their form and function. Building typology is used to regulate the scale, form, and intensity of land development.

2. Building Form
 Building form is the physical shape and appearance of a building. Building form is used to regulate the scale, form, and intensity of land development.

3. Building Typology and Building Form
 Building typology and building form are used to regulate the scale, form, and intensity of land development.

4. Building Typology and Building Form
 Building typology and building form are used to regulate the scale, form, and intensity of land development.

Santa Ana, California Downtown Renaissance Specific Plan

The Evolving Applications of FBCs Organizing Principles

Building Type-Based

1. Purpose: This section establishes the building types permitted within the plan area of the Building Plan. The Building Plan defines what the plan area is and the extent to which the Building Plan applies to the plan area. The plan area is the area within the City limits that is subject to the Building Plan. The plan area is defined by the City limits and the Building Plan. The plan area is defined by the City limits and the Building Plan.

2. Building Types: The following table lists the building types permitted within the plan area of the Building Plan. The building types are defined by their use and their height. The building types are defined by their use and their height.

Building Type	Max Stories in DTZ
Residential	4
Commercial	4
Industrial	4
Office	4
Public	4
Religious	4
Healthcare	4
Education	4
Government	4
Other	4

CHAPTER 4 : THE CODE

4.1.000. Downtown (DTZ) Zone

A. ZONE AND BUILDING TYPES

1. Zone Requirements: The following requirements apply to all property within the DTZ Zone.

2. Building Types Allowed: The following building types and their particular maximum height are allowed in the DTZ Zone subject to compliance with all applicable requirements, including the requirements for each building type (see Chapter 4 prior for individual design standards and definitions).

3. Encroachments: Such encroachments per approval of H&M and P&M Directors, separate permit and agreement.

4. Awnings, Signage, Balconies, Bay Windows and Galleries: per table below.

Encroachment	Vertical	Horizontal
1st floor average gablets/awnings	max 4' 0"	max 4' 0"
2nd floor average gablets/awnings	max 4' 0"	max 4' 0"
3rd floor average gablets/awnings	max 4' 0"	max 4' 0"
Bay window	max 4' 0"	max 4' 0"
Awning	max 4' 0"	max 4' 0"
Signage	max 4' 0"	max 4' 0"
Balcony	max 4' 0"	max 4' 0"
Other	max 4' 0"	max 4' 0"

Santa Ana, California Downtown Renaissance Specific Plan

The Evolving Applications of FBCs | Organizing Principles

Street-Based Codes

This Code is explained by how street types are related to building placement. When not the primary street used by its higher order in the street hierarchy and its main the primary street frontage.

Central Hercules Code: Hercules, California

6. Neighborhood Street

A. Building Placement: Building placement shall be in accordance with the following requirements:

B. Building Volume: Building volume shall be in accordance with the following requirements:

C. Notes:

1. The alignment of the street shall be used to determine the height limit of a building and its main the primary street frontage.

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Street-Based Codes

Central Hercules Code: Hercules, California

The Evolving Applications of FBCs | Organizing Principles

Frontage-Based Codes

Columbia Pike FBC: Arlington, Virginia

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Frontage-Based Codes

Columbia Pike FBC: Arlington, Virginia

B. BUILDING ENVELOPE STANDARDS: MAIN-STREET SITES

Height Specifications:

1. The maximum height of a building shall be measured to the top of the roofline. The maximum height shall be measured to the top of the roofline. The maximum height shall be measured to the top of the roofline.

2. The maximum height of a building shall be measured to the top of the roofline. The maximum height shall be measured to the top of the roofline. The maximum height shall be measured to the top of the roofline.

Setback Specifications:

1. The front setback shall be at least 15 feet. The front setback shall be at least 15 feet. The front setback shall be at least 15 feet.

2. The side setback shall be at least 15 feet. The side setback shall be at least 15 feet. The side setback shall be at least 15 feet.

The Evolving Applications of FBCs | Organizing Principles

Transect-Based

Leander TOD SmartCode: Leander, TX

Leander TOD SmartCode: Leander, TX

The Evolving Applications of FBCs | Organizing Principles

Transect-Based

TABLE 19 • TRANSECT ZONE SUMMARY

RURAL		TRANSECT					URBAN	
T1 Natural	T2 Rural	T3 Sub-Urban	T4 General Urban	T5 Urban Center	T6 Urban Core	SD Special District		

F. Lot Occupancy

Lot Area Coverage of Building Lot	T1	T2	T3	T4	T5	T6	SD
By exception	min. 20 ac. avg.	1,000 sq. ft. min.	no minimum	by exception			
By exception	by variance	by variance	by variance	by variance	by variance	by variance	by exception

G. Building Setback

Front Side Rear	T1	T2	T3	T4	T5	T6	SD
By exception	12 ft. min.	by exception					
By exception	12 ft. min.	by exception					
By exception	12 ft. min.	by exception					

H. Building Dispersion

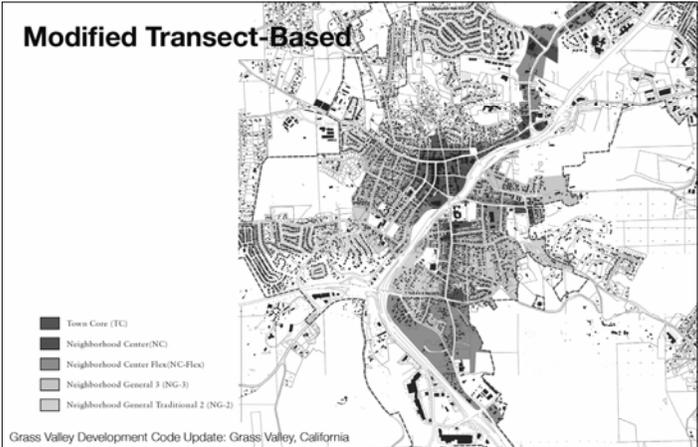
Edge/yard Side/yard Rear/yard	T1	T2	T3	T4	T5	T6	SD
permitted	permitted	permitted	permitted	permitted	permitted	permitted	permitted
permitted	permitted	permitted	permitted	permitted	permitted	permitted	permitted
permitted	permitted	permitted	permitted	permitted	permitted	permitted	permitted
permitted	permitted	permitted	permitted	permitted	permitted	permitted	permitted

I. Private Frontages (see Table 1)

Front Side Rear	T1	T2	T3	T4	T5	T6	SD
not applicable	permitted	permitted	permitted	permitted	permitted	permitted	by exception
not applicable	permitted	permitted	permitted	permitted	permitted	permitted	by exception
not applicable	permitted	permitted	permitted	permitted	permitted	permitted	by exception
not applicable	permitted	permitted	permitted	permitted	permitted	permitted	by exception

The Evolving Applications of FBCs | Organizing Principles

Modified Transect-Based



Grass Valley Development Code Update: Grass Valley, California

The Evolving Applications of FBCs | Organizing Principles

Modified Transect-Based

Form-Based Code	T2 Rural	T3 Sub-Urban	T4 General Urban	T5 Urban Center	T6 Urban Core	Other
Whittier Uptown Specific Plan	U-E: Uptown Edge	U-G: Uptown General	U-CT: Uptown Center			
City of Grass Valley Development Code	NG-2: Neighborhood General-2	NG-3: Neighborhood General-3 NC: Neighborhood Center NC-Flex: Neighborhood Center-Flex	TC: Town Core			
Miami 21	T3: Sub-Urban, with Restricted, Limited, and Open subsets	T4: Urban General, with Restricted, Limited, and Open subsets	T5: Urban Center, with Restricted, Limited, and Open subsets	T6: Urban Core, with Restricted, Limited, and Open subsets, and T6-B, -T2, -24, -36, and -48 subzones based on allowable number of floors	C1: Civic Institutional D1: Work Place District D2: Industrial District	
Santa Ana Renaissance Specific Plan	UN-1: Urban Neighborhood-1	UN-1: Urban Neighborhood-1 CDR: Corridor	UC: Urban Center	RR: Rail Station Zone	R1: Residents/Industrial	
Benicia Downtown Form-Based Code	NG: Neighborhood General	NG-O: Neighborhood General-Open TC-O: Town Core-Open	TC: Town Core			
Montgomery SmartCode	T2: Rural	T3: Sub-Urban	T4: General Urban	T5: Urban Center	T6: Urban Core	T1: Natural
Sarasota County	Edge	General	Core			Preserve
Peoria Development Code	West Main-Local	Sheridan Triangle-Neighborhood Center Prospect Road-Neighborhood Center West Main-Neighborhood Center West Main-Local Commerce	Warehouse District General Warehouse District-Local			
St. Lucie County	Edge	General	Center	Core		Countryside Rural Fringe
Lexander SmartCode	T3: Sub-Urban	T4: Neighborhood General	T5: Neighborhood Center	T6: Urban Core		
Downtown Ventura Specific Plan		T4.1: Urban General T4.2: Urban General-2 T4.3: Urban General-3 T4.4: Thompson Corridor	T5.1: Neighborhood Center	T6.1: Urban Core		
Blue Springs, MO Downtown Development Code	T3: Sub-Urban	T4: General Urban	T5: Urban Center			CS: Civic Space

The Evolving Applications of FBCs | Organizing Principles

Modified Transect-Based

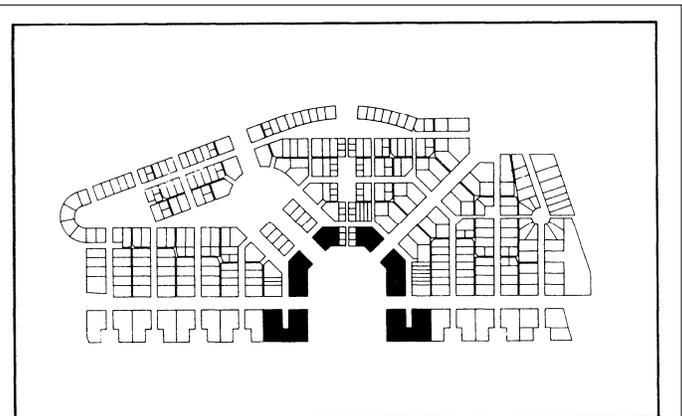
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Sarasota County		Edge	General	Core
Peoria Development Code		West Main-Local	Sheridan Triangle-Neighborhood Center Prospect Road-Neighborhood Center West Main-Neighborhood Center West Main-Local Commerce	Warehouse District- General Warehouse District- Local
St. Lucie County	Edge	General	Center	Core



Building Type-Based

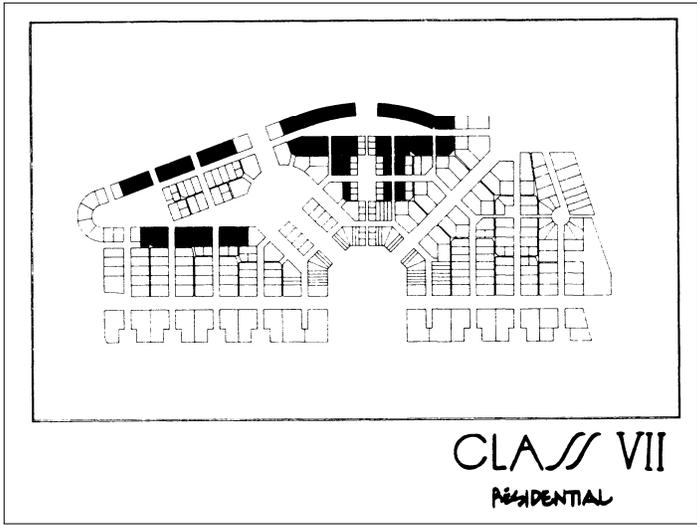
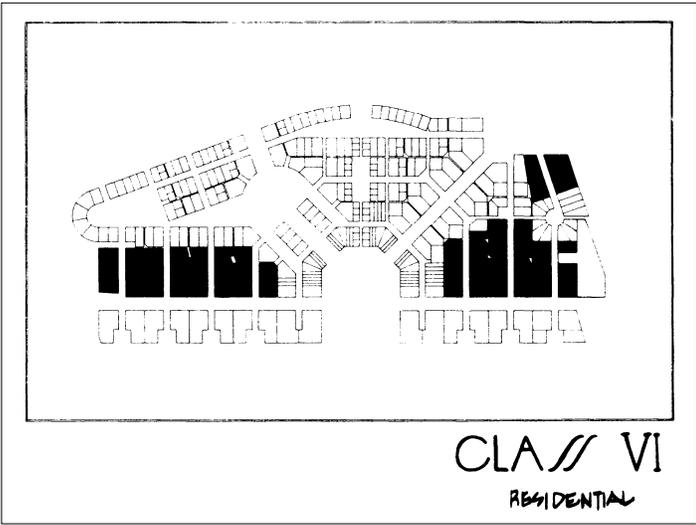
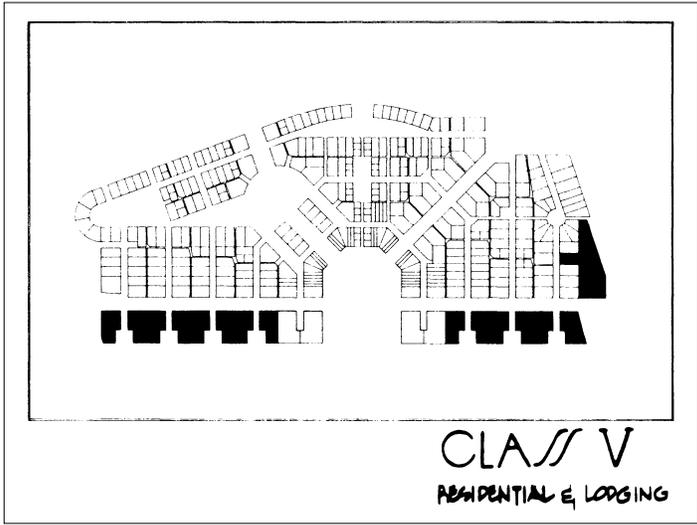
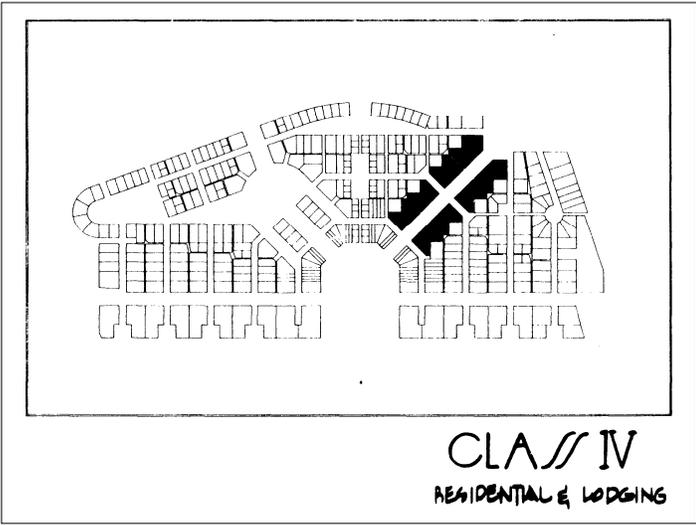
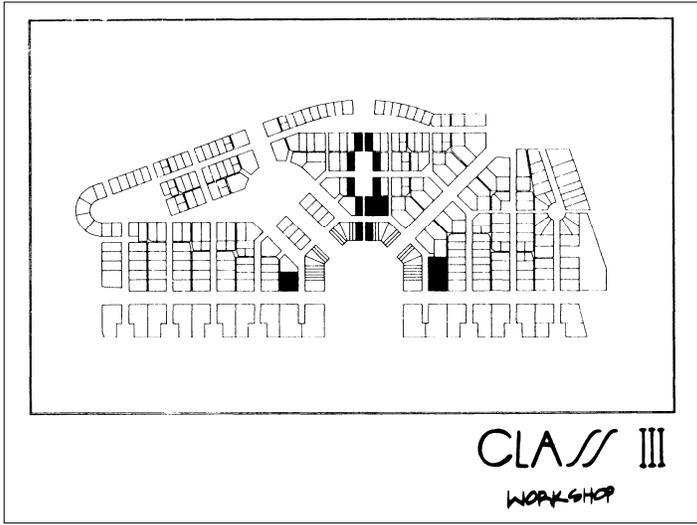
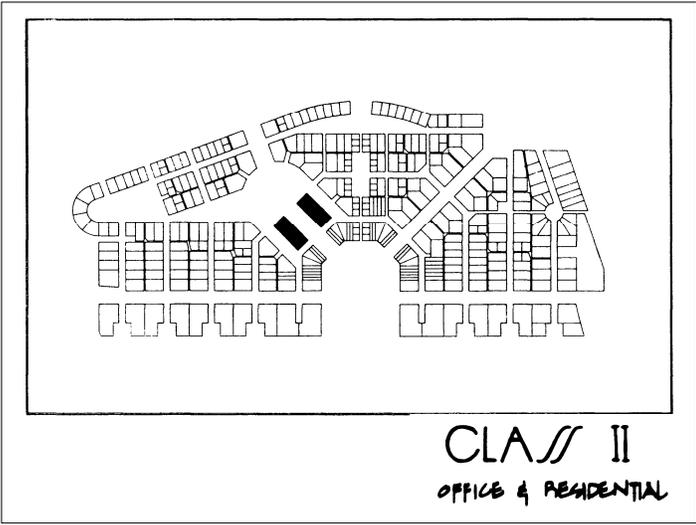


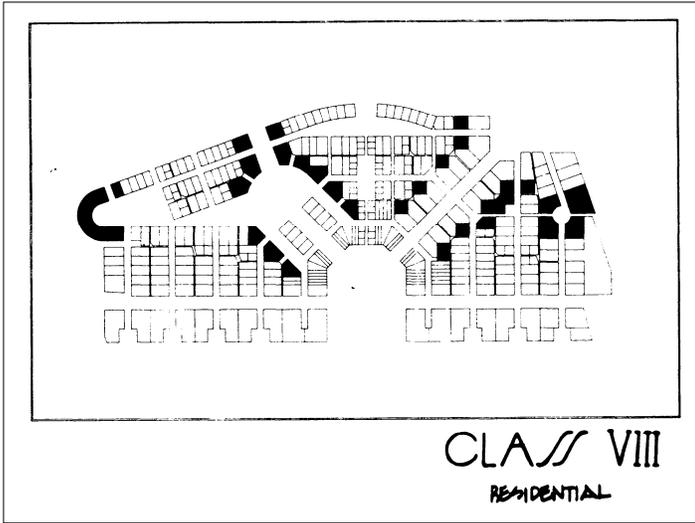
Seaside (FL)



CLASS I
RETAIL, RESIDENTIAL & LODGING

Seaside (FL) – Plan and code by DPZ

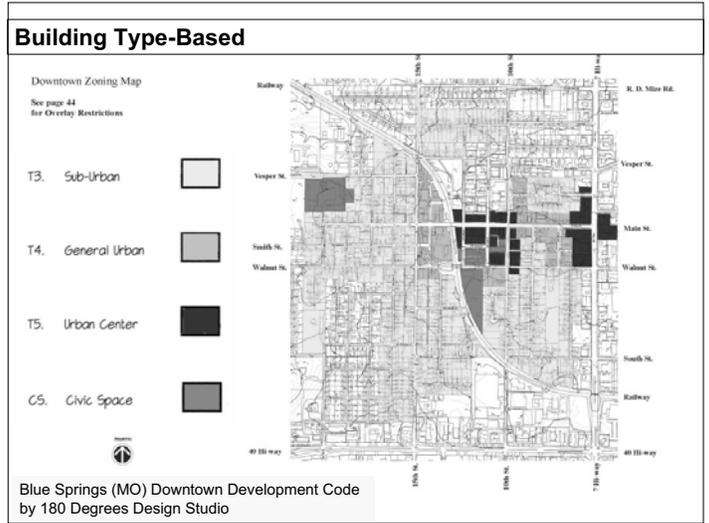
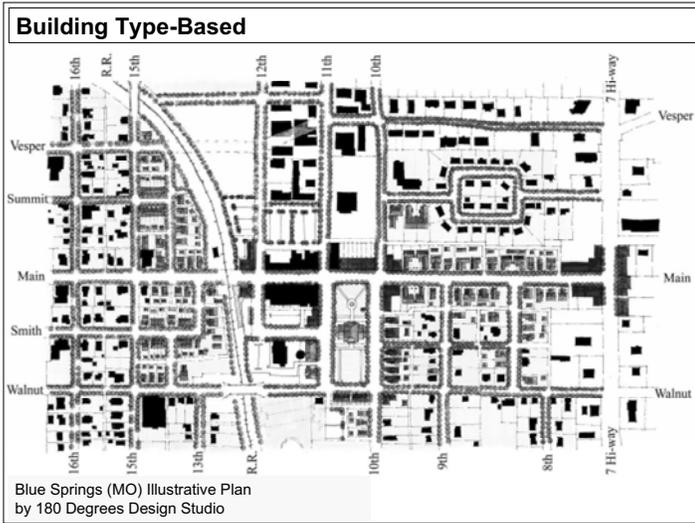




ZONING CODE - TOWN OF SEASIDE

	CLASS I SINGLE-FAMILY RESIDENTIAL	CLASS II SINGLE-FAMILY RESIDENTIAL	CLASS III SINGLE-FAMILY RESIDENTIAL	CLASS IV SINGLE-FAMILY RESIDENTIAL	CLASS V SINGLE-FAMILY RESIDENTIAL	CLASS VI RESIDENTIAL	CLASS VII RESIDENTIAL	CLASS VIII RESIDENTIAL	COMMERCIAL RENTAL
YARD	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]
FRONT PORCH	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]
OFF-ROADWAY	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]
PARKING	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]
SCREENING	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]

Seaside (FL) – Plan and code by DPZ



Blue Springs DDC 15

Type VI: Rowhouse

CLASSIFICATION

Definition:
A dwelling unit attached by a common wall to another dwelling unit. A Rowhouse is generally a fee simple unit, from ground to roof, with no units above or below it.

Transect Zones:

- T5: Allowed
- T4: Allowed
- T3: Not Allowed

Blue Springs (MO) Downtown Development Code
by 180 Degrees Design Studio

URBAN STANDARDS

Allowable Height
T5: 2 to 5 stories permitted
T4: 2 to 3 stories permitted

Additional Standards
Lot Size Area
T4: Minimum 16 feet lot width
T5: No minimum lot size. Lot frontages are limited to no more than sixty (60) feet in width.

Off-Street Parking
T4: One space/dwelling unit
T5: One space/dwelling unit

Allowable Frontages

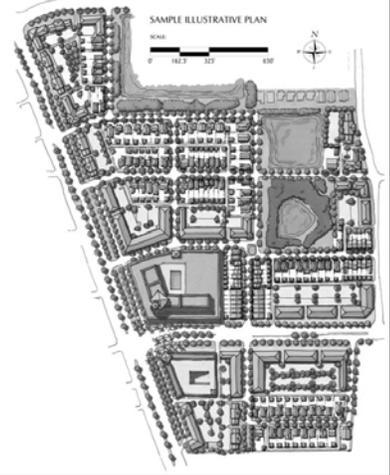
Blue Springs (MO) Downtown Development Code
by 180 Degrees Design Studio

example site



Sarasota County Government
FLORIDA, USA

establishing a vision



Sarasota County Government
FLORIDA, USA

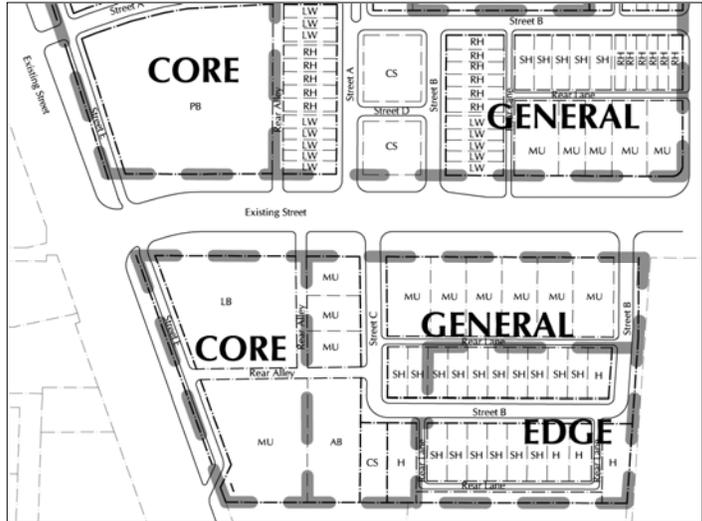
Illustrative Plan

proposed regulating plan



Sarasota County Government
FLORIDA, USA

Regulating Plan



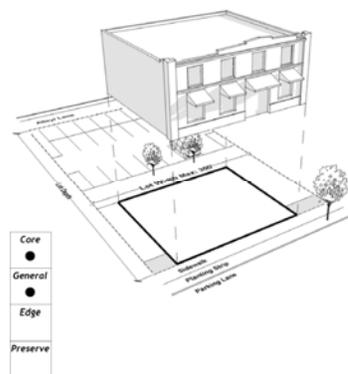
menu of lot types



Liner Building



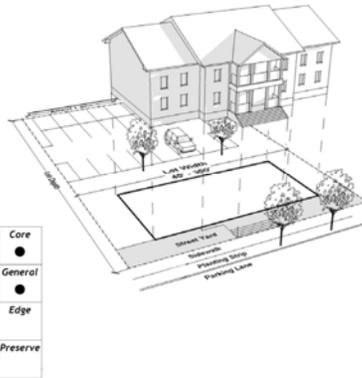
menu of lot types



Mixed-Use

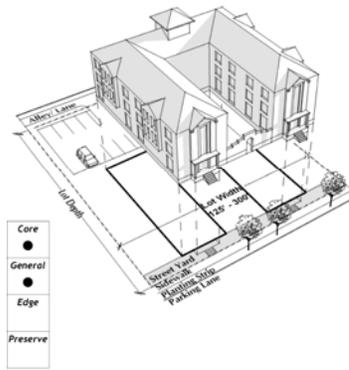


menu of lot types



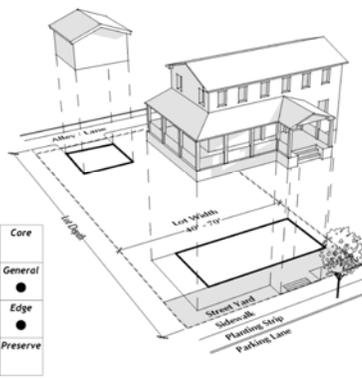
Apartment Building

menu of lot types



Courtyard Building

menu of lot types



House

menu of lot types

Lot Type	Lot Area (min / max in sf)	Lot Width (min / max)	Frontage (min / max)	Lot Coverage (max for all blocks)	Street (min / max)		Yards			Height ¹ (min/max in feet)	Accessory Dwelling Unit (max floor footprint in sf)
					Core	General or Edge	Side (min)	Rear (min)	Water-front (min)		
Pedestrian Building Lot	no min / no max	no min / 600	90% / 100%	100%	0 / 10	not permitted	0	0	20 / 30	2 / 10 ²	not permitted
Lined Building Lot	no min / no max	no min / 600	90% / 100%	100%	0 / 10	not permitted	0	0	20 / 30	2 / 3 ³	not permitted
Mixed-Use Building Lot	no min / no max	no min / 300	90% / 100%	100%	0 / 10	10	0	0	20 / 30	2 / 3 ³	not permitted
Apartment Building Lot	4,000 / no max	40 / 300	80% / 100%	100%	0 / 10	10	0	0	20 / 30	2 / 3 ³	not permitted
Courtyard Building Lot	10,000 / no max	125 / 300	50% / 90%	80%	0 / 10	10	0	0	20 / 30	2 / 3 ³	not permitted
Live-Work Building Lot	1,800 / 7,200	16 / 60	80% / 100%	80%	0 / 10	10	0	15	20 / 30	2 / 3 ³	not permitted
Rowhouse Lot	1,800 / 3,600	16 / 32	90% / 100%	80%	0 / 10	10	0	15	20 / 30	2 / 3 ³	625
Apartment House Lot	4,800 / 18,000	48 / 120	70% / 90%	80%	not permitted	10 / 25	5	15	20 / 30	not permitted	1 / 6 ⁴
Duplex House Lot	5,000 / 10,000	15 / 30	60% / 90%	80%	not permitted	10 / 25	5	10	20 / 30	not permitted	1 / 3 ³
Cottage House Lot	2,400 / 4,800	24 / 40	70% / 90%	60%	not permitted	10 / 25	3	10	20 / 30	not permitted	1 / 2 ²
Sidewalk House Lot	1,800 / 7,200	30 / 60	60% / 90%	50%	not permitted	10 / 10 ⁵	10	10	20 / 30	not permitted	1 / 3 ³
House Lot	4,800 / 6,400	40 / 70	60% / 80%	50%	not permitted	10 / 10	5	10	20 / 30	not permitted	1 / 3 ³
Chick Building Lot	no min / no max	no min / no max	no min / no max	no min / no max	no min / no max	no min / no max	0	10	20 / 30	1 / 3 ³	1,250
Chick Space Lot	no min / no max	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	not permitted

¹ Minimum rear yards apply to lots with alleys or lanes and to lots with neither alleys nor lanes; rear yards do not apply to through lots or to double-frontend lots constructed to maintain a 7' rear yard minimum and maximum.

² Intrastate waterway and bays - 30'; all other waterfront yards - 20'

³ Buildings must comply with both maximum heights, as measured in stories and in feet. Max-heights that exceed the percentage of floor area for a one-story defined in the Florida Building Code are counted as a story for the purpose of measuring height. Space within a no-flyline that is entirely non-habitable is not counted as a story. For heights measured in feet, see Section 6.2.4 for details and exceptions.

⁴ See requirements for accessory dwelling units in Sections 5.3.2.a and 6.11.3.e. The maximum sizes in this column supersede those in Section 5.3.2.a.

⁵ At or below the fifth story, partial buildings must step back at least 20' farther from all streets than the story below; this requirement does not apply to alleys.

⁶ On Courtyard Building Lots, the larger dimension of the central garden or courtyard must be at least 30' long if oriented east-west or 40' if oriented north-south. If the longer dimension is less than 11', architectural projections such as porches and balconies may only extend into the courtyard from one side. Eaveless access is allowed only up to the courtyard level.

⁷ One side yard must be 10' min; the opposite side yard may be 0' if the adjacent lot is a Sidewalk House Lot or if the adjacent lot provides a maintenance easement, otherwise the opposite side yard must 7' min.

permitted uses

Lot Type	Single-family detached	Two-family house	Upper story/ ¹ attached residential	Family Day Care Home	Adult Day Care Home (up to 6)	Community Residential Home (see Section 5.3.2.2)	Guest house or accessory dwelling unit (see 5.3.2.2 & d)	Live-work unit (see Section 5.2.2)	Bed and Breakfast	Transient accommodations	Public & Civic Use Categories (Items 6.1.2.2, 6.1.6, 6.1.7, 6.1.8, 6.1.9)	ENTIRE ZONING DISTRICTS:	Commercial Neighborhood (CN)	Office, Professional and Institutional (OPI)	Commercial General (CG)
Pedestrian Building Lot			P	P	P	L	P	P	P	P			S	S	S
Lined Building Lot			P	P	P	L	P	P	P	P			S	S	S
Mixed-Use Building Lot			P*	P*	P*	L	P	P	P	P			S	S	S
Apartment Building Lot			P	P	P	L	P	P							
Courtyard Building Lot			P	P	P	L	P	P							
Live-Work Building Lot			P	P	P	L	L	P	P	P			S	S	S
Rowhouse Lot			P	P	P	L	L	P	P						
Apartment House Lot			P	P	P	L	L	P							
Duplex House Lot		P		P	P	L	L	L							
Cottage House Lot		P		P	P	L	L	L							
Sidewalk House Lot		P		P	P	L	L	L							
House Lot		P		P	P	L	L	L							
Chick Building Lot											P				
Chick Space Lot											P**				

NOTES: P = Permitted use (see Section 5.1.1.a.1) L = Permitted with limitations (see Section 5.1.1.a.2) BLANK = Use not permitted

* Residential uses in Mixed-Use Building Lots may not be placed in the ground floor story.

** Chick Space Lots are not building sites; see Section 6.11.5.1 for allowable uses on Chick Space Lots

Example codes:

Downtown Development Code for Blue Springs, MO:
www.spikowski.com/BlueSpringsMO-DowntownDevelopmentCode.pdf

Mixed-Use Infill Code for Sarasota County, FL:
www.spikowski.com/Sarasota.htm

These slides:

www.spikowski.com/AustinOrganizingPrinciples.pdf

FBC 101: Introduction to Form-Based Coding

A prerequisite for the other two courses, this course covers the principles and components of Form-Based Codes, a brief history of zoning and planning practice, the legal basis for Form-Based Coding, a comparison of the tools available to shape community form and character provided by Euclidean zoning versus Form-Based Codes, a field exercise to increase participant understanding of the components of good urbanism and how they can be incorporated into a Form-Based Code, a review of the kinds of FBCs, FBC case studies, and an introduction to how an FBC is prepared.

- July 15-17, 2008, Ventura, CA [REGISTER](#)
- September 26-27, 2008, Arizona State University, Phoenix, AZ [REGISTER](#)
- November 20-21, 2008, Oak Park, IL

FBC 201: Preparing a Form-Based Code – Design Considerations

This course goes into depth on how to create and use building form and public space standards within a regulating plan in already built-out communities, Greenfield sites, re-development sites and regional plans. Architectural standards, imaging techniques for charrettes, and code document design are also covered. The course includes not only lectures presenting design principles and case studies but also hands-on participation creating regulation plans and their components.

- June 12-15, 2008, Fort Worth, TX

FBC 301: Completing, Adopting and Administering the Code

This course covers a checklist for evaluating the effectiveness of a Form-Based Code, an in-depth look at the advantages, disadvantages, and mechanics of mandatory, parallel and floating-zone forms of FBCs, how to structure the coding process, including what must happen before and after the code is drafted, what to keep and what to discard from an existing conventional code, the legal aspects of adopting a FBC in its consistency with the comprehensive plan, adoption mechanics and insulating against potential challenges, and post-adoption implementation.

- January/February 2009, Phoenix, AZ *(tentative)*

For more information and for on-line registration go to our website at www.formbasedcodes.org or call Carol Wyant at 312/346-5942.

FBCI Form-Based
Codes
Institute



SPIKOWSKI PLANNING ASSOCIATES

William M. Spikowski, AICP

1617 Hendry Street, Suite 416
Fort Myers, Florida 33901-2947
phone: (239) 334-8866
fax: (239) 334-8878
e-mail: bill@spikowski.com
web: www.spikowski.com