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PRACTICE FORM-BASED ZONING

6

Avoiding Common Form-Based Code Mistakes, Part 2

By Daniel Parolek

This article is the second part of a two-part series intended to arm city planners and code writers with the knowledge to effectively lead, coordinate, or contract out for a form-based coding project.

Part one focused on misconceptions and common mistakes related to the practice of form-based coding. It also reinforced that form-based coding represents a paradigm shift in zoning and should not be thought of as simply a way to refine a Euclidean zoning ordinance. The table included in part one presented a range of different approaches to regulating urban form and introduced terminology to differentiate these approaches. Some of the themes from part one spill over to this issue, such as the discussion about the role of land-use tables within form-based codes (FBCs), the importance of the community character analysis and visioning phases, and the effective use of the urban to rural transect. This issue continues the list of common mistakes to avoid and concludes with a list of tips for creating an effective FBC.

NOT CAREFULLY VETTING ALL DEVELOPMENT STANDARDS

Most standards within Euclidean zoning codes are based on a suburban paradigm of separating and buffering uses. Consequently, these codes include many barriers to creating walkable urban environments and often include provisions that are not relevant, or at least less important, in a walkable urban environment. Therefore it is crucial to evaluate all use-specific and general development standards, including parking, landscaping, lighting, signage, and stormwater standards, from the perspective of whether or not they are applicable to creating or reinforcing walkable urban places. Specific examples of this include landscape buffers, extensive parking lot landscaping standards, lengthy and complicated signage standards, and the convoluted way in which many codes try to define mixed use or live/work.

A. Description

Awning Signs. Awnings are a traditional storefront fitting and can be used to protect merchants' wares and keep storefront interiors shaded and cool in hot weather. Retail tenant signs may be painted, screen printed, or appliquéed on the awnings.

B. Standards

Size		
Projecting		
Sign Area	1 sq. ft. per linear foot of shopfront, max.	A
Lettering Height	16" max.	B
Lettering Thickness	6" max.	C
Sloping Plane		
Sign Area	25% coverage max.	D
Lettering Height	18" max.	E

Size (continued)		
Valance		
Sign Area	75% coverage max.	F
Width	Storefront width, max.	G
Height	8" min.; 16" max.	H
Lettering Height	8"max.	I
Location		
Clear Height	8' min.	J
Signs per Awning	1 projecting; or 1 valance and 1 sloping plane max.	

Miscellaneous

Only the tenant's store name, logo, and/or address should be applied to the awning. Additional information is prohibited.

Open-ended awnings are strongly encouraged.

Vinyl or plastic awnings are strongly discouraged.

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Effective form-based codes address and refine all general development standards such as this signage extract from a typical FBC.

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About the Author

Daniel Parolek is coauthor of the first comprehensive book on FBCs, *Form-Based Codes: A Guide for Planners, Urban Designers, Municipalities, and Developers*. He is a founding board member of the Form-Based Codes Institute, and founding principal of Opticos Design, Inc., a California Benefit Corporation. Opticos's recent and current form-based coding work includes a citywide FBC for Cincinnati, Ohio, FBCs for downtown Mesa, Arizona, and three major commercial corridors in Richmond, California, and a SmartCode update for Petaluma, California's SMART Station Area.

NOT REFINING THE USE TABLES

One of the most positive influences FBCs have had on many recent zoning reform efforts, form-based or not, is simplifying and clarifying the approach to use tables. The following are recommendations for use tables within an FBC:

1. Do not pull your existing use tables into your FBC without carefully refining them.

2. Organize your table by clearly defined but generalized use types. This allows the list to be shorter and for staff to determine what general use type category a use fits into.

3. Make sure that you have an administrative use permit level of approval that allows staff to determine if potentially supportive uses are appropriate for a zone.

4. Be sure to consider the size of use as well as the use itself in terms of appropriateness and impact.

For example, along a neighborhood main street, general commercial should be permitted by right up to a certain size, usually around 10,000 square feet. Larger retail uses typically serve a regional market and have greater impacts due to their traffic generation. Therefore, you could permit up to 10,000 square feet by right, allow between 10,001 and 15,000 square feet with an administrative use permit, and require a conditional use permit for anything larger.

> Building type standards, when included, are supplemental to building form standards. Typically a range of building types are allowed for each form-based zone, and the building type standards define and regulate characteristics of each permissible building type.

OVERCOMPLICATING TRANSECT CALIBRATION

As mentioned in part one, not all FBCs are transect based; it is simply one of many different possible organizing principles. But the transect has proven to be an effective tool for site-specific and citywide applications in cities like Miami, Cincinnati, Flagstaff, Arizona, and even small towns like Kingsburg, California. Other cities, like Fresno and Tehachapi, California, used the transect as a foundation but changed the terminology at the request of the community. When calibrating the transect to make it specific to your community, you should always use the six base transect zones as a starting point and tier subzones off of those bases. If you create more than six base transect zones, you may overcomplicate the coding process. It is likely, especially if you are applying the code city- or countywide, that you will need to create subzones underneath the six base zones. For example, Miami's FBC has seven T-6 Urban Core zones, and Beaufort County, South Carolina, on the more rural side, has an early draft with two T2 zones and three T3 zones.

Building Type	Transect Zones
 **Rowhouse.** This Building Type is a small- to medium-sized typically attached structure that consists of 2–8 Rowhouses placed side-by-side. In a feature unique to Cincinnati, this Type may also occasionally be detached with minimal separations between the buildings. This Type is typically located within medium-density neighborhoods or in a location that transitions from a primarily single-family neighborhood into a neighborhood main street. This Type enables appropriately-scaled, well-designed higher densities and is important for providing a broad choice of housing types and promoting walkability. Syn: **Townhouse**	T3E T3N **T4N.1 T4N.2** T5MS T5N.1 **T5N.2 T5F** T6C
 **Multi-plex: Small.** This Building Type is a medium structure that consists of 3–6 side-by-side and/or stacked dwelling units, typically with one shared entry or individual entries along the front. This Type has the appearance of a medium-sized family home and is appropriately scaled to fit sparingly within primarily single-family neighborhoods or into medium-density neighborhoods. This Type enables appropriately-scaled, well-designed higher densities and is important for providing a broad choice of housing types and promoting walkability.	T3E T3N **T4N.1 T4N.2** T5MS **T5N.1** **T5N.2 T5F** T6C
 **Multi-plex: Large.** This Building Type is a medium- to large-sized structure that consists of 7–18 side-by-side and/or stacked dwelling units, typically with one shared entry. This Type is appropriately scaled to fit in within medium-density neighborhoods or sparingly within large lot predominantly single-family neighborhoods. This Type enables appropriately-scaled, well-designed higher densities and is important for providing a broad choice of housing types and promoting walkability.	T3E T3N **T4N.1** T4N.2 T5MS **T5N.1** **T5N.2 T5F** T6C

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CONFUSING BUILDING TYPES WITH FORM-BASED ZONE STANDARDS

The most effective FBCs replace use-based zones with form-based zones. The development standards for the form-based zones, often called building form standards, include prescriptive requirements for building location, height, size and massing, and parking location. In addition to defining a maximum development envelope on a lot, building form standards regulate how the buildings relate to one another to create a certain type of place.

In contrast, building types standards, if used in an FBC, are typically supplemental to the zone standards and define a set of allowed building types for each zone (typically more than one building type per zone). Each building type will then typically have type-specific design standards such as minimum size of a courtyard for a courtyard building type. Building types are a great way to articulate the ways that new development can complement an existing pattern to be reinforced or protected. While conventional zoning standards such as density and floor-area ratio (FAR) fail to acknowledge the patterns that make up the physical character of a community, the FBC applies components such as building types to recognize and address this character.

NOT SAYING NO TO PROJECTS THAT DO NOT MEET THE CODE

Your FBC can only work if your decision makers support it and use it as intended. Political pressure to compromise may come from a national drugstore or fast-food chain that petitions for an exception to the FBC's standards. Local officials must be willing to say no to projects that do not meet the community's vision and the code's intent. An important aspect of getting to this point is carefully integrating decision makers throughout the visioning process to enable them to have their say, to educate them on the intent, and to ultimately understand the long-term benefits of saying no.

TIPS FOR CREATING AN EFFECTIVE FBC

The final portion of this article focuses on tips for creating an effective FBC and includes guidance to help communities select a knowledgeable consultant.

Conduct a Community-Character Analysis

The most important step in creating an effective FBC is the community-character analysis, which establishes an understanding of a community's unique DNA and makes it the foundation for the new zoning code. This analysis provides the missing link in zoning back to the unique aspects of a community. This step is also likely the most important differentiator between a conventional approach to zoning and a form-based coding approach. Instead of using the existing regulations as the foundation for the new regulations, the community character analysis enables the FBC to use the local character as the foundation and then compares it to the preexisting regulations to ensure that the code is not downzoning, ignoring policy direction previously made by the city, or potentially causing other legal issues.

The community character analysis typically includes both macro-scale (citywide) and micro-scale (block, lot, and building) work, involving extensive mapping, photographing, and often measuring specific characteristics of a range of prototypical places within a community. The mapping will typically include transportation networks, building footprints, natural features, public spaces, neighborhood boundaries (ideally based on a quarter-mile walk

Opticos Design, Inc. and Keiji Twai

Extensive photo documentation of Flagstaff's unique community character informed the FBC effort.

radius), existing zoning, and special features, such as topography. The photography helps illustrate specific building, frontage, and public space types as well as other opportunities and issues that will inform the visioning and coding process. Photographs also serve as the basis for poster boards showing the general community character for different types of places within a community. For these reasons, photographs are invaluable to the public-engagement process. For a more detailed explanation, see *Form-Based Codes* (Wiley 2008).

For a site-specific or neighborhood application, the community character analysis will show how the FBC application area relates to its larger context and build an understanding of the kit of parts for the FBC. In a citywide or countywide application this process is invaluable for developing an understanding of the different types of places that exist and developing a hierarchy of place types that should be integrated into comprehensive planning and reinforced by the FBC. An example of this is the rural crossroads place type that was defined for rural Beaufort County, South Carolina, as part of the community character analysis for its FBC.

For all scales of application, this process establishes a foundation for a vision and an FBC that is rooted in the history and culture of place. It is an excellent education tool and enables the coding team to build a level of trust with the community that the FBC will reinforce the unique and desirable aspects of the place.

Complete a Visioning Process

FBCs are often described as a zoning tool that can predictably implement a community's vision. But to be effective as a foundation for an FBC, this vision needs to be more than just inspirational photos from other communities, generalized urban design diagrams, or broad policy statements advocating a mix of uses and walkability. A detailed visioning and public engagement process is invaluable to the long-term success of an FBC.

For citywide and other larger codes, there are two different approaches to visioning. The first approach focuses on prototypical design issues and how the code will address them. This does not necessitate a charrette but does include extensive public engagement. Miami's form-based coding team used this approach to visioning in creating Miami 21, a citywide FBC. The second strategy for large-scale visioning involves selecting prototypical priority sites or neighborhoods throughout the city or county, hosting design charrettes for these sites, and using the resulting case studies to inform how the FBC will be effectively applied to similar types of places throughout the city or county. This approach was used in Livermore and Kingsburg, California; Flagstaff, Arizona; Cincinnati; and Beaufort County, South Carolina.

It is important to clarify that the charrette, as used here, is a multiday process—which is usually a minimum of four days of consistent engagement or four or more days broken into two, two-plus day sessions—involving a multidisciplinary team including an economist, transportation consultant, and other specialists needed to address place-specific issues such as affordable housing or main-street retail programming.

DPZ

For Miami's FBC, the code team used the visioning process to address appropriate transitions from high-intensity corridors into single-family neighborhoods and used this to inform the code standards and mapping along the corridors.

This information helps the code writers to anticipate and respond to the needs of the emerging plan, and it serves to help participants better understand the implications and features of the expected results. For more information on charrettes see *The Charrette Handbook* (APA Planners Press 2006).

While an FBC is not written during the charrette, it is important to make progress on the code during the charrette. Often, a charrette provides an opportunity to vet the intent of the code, finalize a list of form-based zones, and consider potential allowed uses. Furthermore, a charrette can be useful for fleshing out key dimensional regulations for zones; refining a list of frontage, building, and civic space types along with their descriptions and dimensional regulations; giving an overview of the typical code format; formulating one or more drafts of regulating plans that map form-based zones; outlining a strategy for plugging the FBC into a community's regulatory framework; and discussing components of the FBC with city staff and other community stakeholders.

Graphically Assess Your Existing Code

Unpredictable build out under Euclidean zoning codes is one of the primary reasons many communities are looking for alternative zoning approaches like FBCs. The numerical parameters of Euclidean codes, while easy to compare, do not create predictable built results and often preclude walkable, urban development.

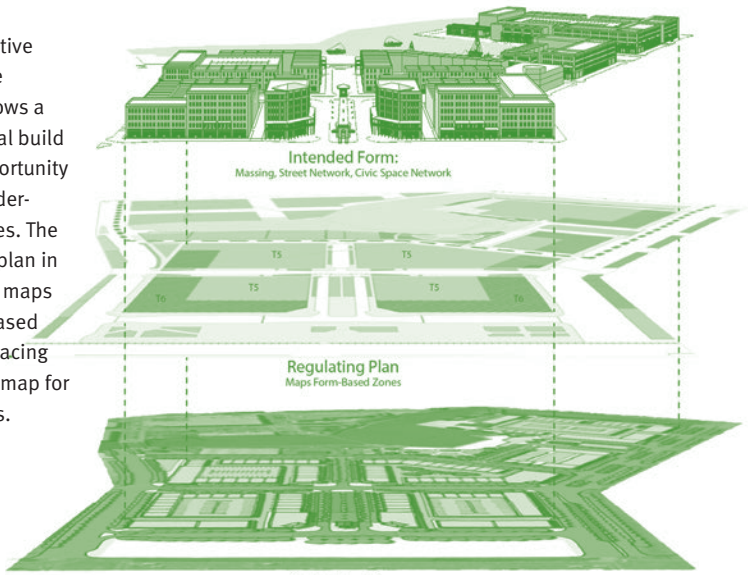
To target these issue areas in your existing code your FBC process should use three-dimensional studies to graphically assess each existing zoning district (starting with medium-density residential, then moving on to commercial districts in neighborhood main street and downtown areas) for two or three typical lot sizes that exist in those zones. This is most important in existing walkable urban areas. The studies should enable you to assess the following:

1. What regulation or set of regulations is the most limiting factor in development? This is typically parking but can also be lot coverage, FAR, setbacks, etc.

2. What regulations are promoting bad development? These may be provisions encouraging lot aggregation and large buildings in a context where smaller buildings are more appropriate, or they may be simple things like allowing parking in the front of houses or not requiring a large enough rear setback for medium-density residential areas.

3. Is your code disincentivizing smaller units? This is typically due to high parking requirements for small units.

The illustrative plan on the bottom shows a hypothetical build out on opportunity sites or under-utilized sites. The regulating plan in the middle maps the form-based zones, replacing the zoning map for these areas.



4. What suburban DNA is inherent in the development standards? For example, when multifamily or commercial buildings get bigger, do the existing standards require a larger setback to "buffer" them from one another (suburban), or do the regulations encourage the buildings to get closer together and to the street (urban)?

Adopt a Comprehensive Plan That Sets the Stage for an FBC

The most important thing to do when writing a comprehensive plan in the context of preparing for an FBC is to designate, differentiate, and map (existing and desired) walkable urban and drivable suburban areas. The form-based coding will be used to regulate the walkable urban areas, and a more conventional approach to zoning can be used to regulate drivable suburban areas. Secondarily, the community must determine the desired degree of change for each of these areas. This will ultimately help inform the vision process and the goal of the FBC. Ideally, a comprehensive plan also introduces a palette of walkable urban place types and the terminology of community character such as building types, frontage types, and transect zones (if you are going to use that as an organizing principle for your FBC). If a land-use map is required, it is helpful to also include a community character map or set of maps that lay out the desired place-type structure within the community as a supplement to the land-use map.

Rewrite Your Administration and Procedures Provisions

From an administrative perspective, the number one goal for any FBC is a clear path to entitlement for projects that meet the standards. Therefore an FBC process should start by diagramming the existing path—from submittal to approval— for the different types of projects or applications and then work to simplify this path for each type of project within the FBC application area. The public process defined above should enable and allow more administrative review and eliminate the need to publicly scruti-

R-3 MULTI-FAMILY MEDIUM DENSITY RESIDENTIAL

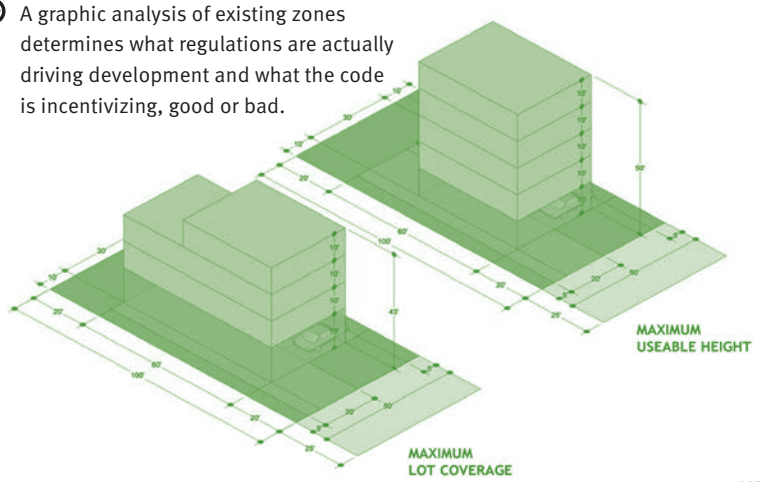
INTENT

- Areas designated as multi-family medium density residential allow single-family, duplex and multifamily structures up to and including low-rise apartment structures. This category allows a maximum density of **sixty five (65) units per net acre.**
- Allowed within this district, and subject to specific limitations, are supporting services such as places of worship, primary and secondary schools, daycare, community based residential facilities and convenience establishments.

DISTRICT REGULATIONS		
LOT AREA (sf)	min	5,000 sf
LOT WIDTH (ft)	min	50 ft
LOT COVERAGE *(footprint)*	max	0.4 x GLA
FRONTAGE REQUIREMENTS		N/A
FLOOR AREA RATIO - (FAR)	max	0.75 x GLA
GREEN SPACE (open space)	min	0.15 x GLA
DENSITY (units/acre)	max	65 units per net acre
SETBACKS		
• FRONT (ft)	min	20'
• SIDE (ft)	min	10'
• REAR (ft)	min	10' / 20' abutting LDR
PARKING REQUIREMENTS	min	1/1 bd • 2/2&3 bd • 3/4 bd+ • 1/10 du guests
PRINCIPAL BUILDING HEIGHT	max	50 ft

CASE DATA (Standard-Size/ Single-Frontage Lot)	
NET LOT AREA - (NLA	5,000 sf
GROSS LOT AREA - (GLA)	6,250 sf
FLOOR AREA RATIO - (FAR)	4,687.5 sf
LOT COVERAGE	2,500 sf
BUILDABLE AREA	2,100 sf
GREEN SPACE	937.5 sf
YARDS	
• FRONT (sf)	1,000 sf
• SIDES (sf)	600 sf
• REAR (sf)	500 sf

A graphic analysis of existing zones determines what regulations are actually driving development and what the code is incentivizing, good or bad.



ANALYSIS

- **R-3** maintains the minimum lot size for the low density residential districts (**R-1** & **R-2**); **FAR** increases by 20% and **DENSITY** increases by 72% while the **BUILDABLE AREA** decreases by 12.5% due to setback changes.
- It should be noted that there is no category allowing for densities between 18 units per acre and 65 units per acre.
- Based on the assumptions of a 50' **PROW** and a single frontage lot; the **LOT COVERAGE** is 2,500 sf which exceeds the **BUILDABLE AREA** of 2,100 sf. Providing more than 4 dwelling units is difficult due to **FAR** constraints, this encourages lot aggregation.
- **R-3** typically yields an open and paved ground floor with a residential program located in a building elevated "on stilts". There is no requirement for a habitable liner to screen parking from the street.
- Parking becomes a critical concern in **R-3** greatly favoring one bedroom units at the expense of larger units desirable for households numbering 3 or more people. Parking constraints limit the density as multilevel parking is impossible on small lots.

nize every proposed project. In addition, the administration and procedures need to build in the right type of flexibility. Flexibility from the current standards is seen as general relief. Flexibility in a good FBC is seen as topical and always relates to the physical form and character of the vision that's being implemented.

Make FBCs Part of Your Economic Development Strategy

With the growing demand for walkable urban places, urbanism should be an important part of every community's economic development strategy. In a December 2010 *Planning* magazine article titled "Sarasota's Smart Growth Dividend," Peter Katz and Joe Minicozzi, AICP, discussed the economic benefits of compact urban development compared to sprawl, drawing on research from several cities and counties across the country. For example, according to Minicozzi, suburban-style big-box stores yield about $51,000 in tax revenue per acre to the city of Asheville, North Carolina, while an average six-story mixed use building in downtown pays more than $250,000 in taxes per acre to the city. A form-based code is the ideal zoning tool to promote compact, urban development.

Conclusion

Form-based coding is a paradigm shift in zoning to create more walkable, sustainable places. Don't be intimidated. Start small, and let the application of FBCs grow. Be sure not to hesitate to bring in assistance because form-based coding requires a new skill set.

TIPS FOR SELECTING A FORM-BASED CODE CONSULTANT

1. Questions to ask about a firm's FBC experience:

- Which of your FBCs use form as the organizing principle? Explain how and why the particular system was chosen.
- How were the form-based zones locally calibrated?
- Do your FBCs use or rely on design guidelines?
- How do your FBCs relate to and plug into existing codes?
- Do your FBCs replace the underlying base zones? If not, what status do the underlying base zones still have?
- How do you differentiate between regulatory and illustrative drawings in your codes?
- Explain how thoroughfare standards have been included in your FBCs.
- Explain how multiday charrettes were integrated into your past coding efforts.
- Did your code change zone boundaries or use the existing zone boundaries?
- What zone standards did you find that were obstacles to creating good urban projects/infill, and what did you replace them with?

2. Process/Approach checklist for proposed approach (allows all proposals to be compared equally):

- Use form (physical character) as organizing principle rather than use.
- Photograph local or regional precedents for building types, frontage types, and form-based zones/transect zones.
- Conduct a micro-scale analysis/DNA sampling of local precedent areas.
- Hold a multiday design charrette to test or further develop the vision.
- Replace underlying base zones with form-based zones.
- Create refined/simplified land-use tables.
- Revise parking requirements and design parameters.
- Revise residential open space requirements.
- Determine if landscape requirements are necessary.
- Rewrite administration and procedures provisions for the FBC area.
- Determine conflicting regulations for standards that are specific to uses.
- Vet thoroughfare standards with city engineers, public works staff, or state department of transportation staff (if applicable).
- Assess and redefine boundaries of existing zones as they are replaced with form-based zones.
- Use three-dimensional graphics to illustrate flaws in existing development standards.
- Use maps to analyze connectivity, the figure ground plan, and the larger context (e.g., pedestrian sheds).
- Prepare detailed illustrative plans with building footprints (using pedestrian sheds as walkability basis).
- Provide a clear way that the FBC will plug into and relate to the existing zoning code.

Cover image: Opticos Design, Inc.; design concept by Lisa Barton

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DO YOU KNOW HOW TO CALLIBRATE A FORM-BASED CODE?

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