Form-Based Zoning for Infill and Corridors

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Corridors are environments along edges of neighborhoods/districts.

Places along Edges
Coordinate street side with street segments
But that’s not how they’re typically planned
Zoning for the corridor and zoning for the neighborhood
Zoning for the neighborhood
Zoning for the corridor
Two different, adjacent environments that affect each other
Summary of Issue 1

Intense Corridor Devt backs up to Neighborhoods

• Corridor sites have two important sides:
  • Corridor Side
  • Neighborhood Side
• What do those two very different sides need?
Density, Setbacks and Height: Compliant
Compliance needs to include the Pattern as a factor
What's in common?
Conventional zoning says they’re the same

0.60 FAR

0.60 FAR
They couldn’t be more different!

3 at 3 stories and 1 at 12 stories

2 story building on 2/3 of site
Would you describe other things this way?

max .75 inches tall

oops!
F.A.R. a measuring tool

FAR is a great and fast measuring tool but should not be used to drive design or decision-making: best as a ‘resultant’ factor.
Density: another measuring tool

Low  Medium  High
Realities of FAR and Density

FAR, Density

less

Building and Lot Size

more
Summary Issue 2

Standards often unaware of outcomes, not aimed at full compatibility with neighbors

- Avoid FAR, Density as inputs: use only as resultants
- Identify what you want more of and those factors
over 2 miles of commercial zoning

Mapping form-based zones: Hierarchy of places

3 Overzoning, Change
Regeneration

Targeted Infill

Preservation
Zoning That Sees the Community
Zoning That Sees the Community
Zoning That Sees the Community
Thriving Re-Urbanization as a Goal for 42 Neighborhoods

Legend
- Neighborhood Centers
- Evolve
- Maintain
- Transform
- Compact Walkable Half Mile
- Cincinnati Municipal Boundary
- River

Plan Cincinnati Growth Framework Map and Form-Based Code Priority Areas
## Example FBC Approaches and Scenarios

<table>
<thead>
<tr>
<th>Components</th>
<th>Greenfield Neighborhood</th>
<th>Infill Neighborhood</th>
<th>Regeneration Corridor</th>
<th>Preservation Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Degree of Change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Expectations</td>
<td>Basic</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Regulating Plan</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Block Standards</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Standards</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streetscape Standards</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Civic Space Standards</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Placement Standards</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Parking Placement Standards</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Building Height Standards</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Adjacency / Massing Standards</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Building Type Standards</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Frontage Type Standards</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Land Use Standards</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Architectural Style Standards</td>
<td></td>
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<td>X</td>
</tr>
<tr>
<td>Signage Standards</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Public Art Standards</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Other Standards identified by you</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Sustainability is addressed within each relevant code topic</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Conventional Zoning and Form-Based Zoning © 2012 Opticos Design, Inc.
Summary Issue 3

Over-zoned and dissipated development

• Translate policy direction into centers and segments:
  • **Corridor General**: mostly housing, w retail, auto-oriented services
  • **Local centers**: mostly neighd retail, office, w housing
  • **Community-level Centers**: mostly intense retail, office, w housing

• Select Code Components in response to policy direction
Intrinsic Residential Densities by Type
In Dwelling Units Per Acre (D.U.A.)

<10 10 - 12 20 - 35 35 - 50 50 - 100 100 - 200+

House Form
Estate House Duplex to Mansion Bungalow House Form
Quadruplex Apartment Courtyard

Block Form
Rowhouse Flex Shed Flex Shed Lined Tower
Small Building Large Building

A Range of American Building Types

HOUSE FORM TRANSITIONAL BLOCK FORM

2013 APA San Diego, CA
Compatibility through Building Types

**Chunky Infill**
- Difficult to find large sites
- Transitions are larger/bulkier
- Less walkable services
- Resistance tends to be higher

**Fine-Grained Infill**
- Easier to find smaller sites
- Transitions are within context
- More walkable services
- Resistance tends to be lower
Form-Based Zoning: Variety and Compatibility Focused
Key Characteristics of each Type

1. **Lot Size:** Min Needed / Max Compatible

2. **On-site open space?** Min size to be useful

3. **Building Size:** Min Needed/Max Compatible

4. **Parking location/Access:** to support context

5. **Tenant access:** to make livable

6. **Frontage options:** Flexible w/in context
Building Standards

5.10 STANDARDS SPECIFIC TO BUILDINGS

5.10.120 COURTYARD BUILDING STANDARDS

A. Description and Intent

1. Description. A building comprised of attached units arranged to share one or more courtyards with pedestrian access to the building’s entrances from the courtyard and/or from the street. The building is designed to give the appearance of a large house. The courtyard is intended to be an outdoor room that is an extension of the public realm. Parking is located at the rear of the site and may occur along the street-access driveways. Courtyard buildings may accommodate non-residential uses is either a live-work configuration or as solely commercial/retail space facing the primary street as allowed by the zone.

Resultant Density: 20 to 42

2. Examples of Intended Physical Character. The following examples are illustrative of the range of physical character for the Courtyard Building type in the zones allowed by this Code.

Above: Courtyard Building with pedestrian access designed to appear as a large single-family house. Entry to the courtyard is through the pergola in center of photo.

Above: Courtyard building with stoop frontage leading its central entry to courtyard through pergola in center of photo. Street facing units are entered from the street and from the courtyard.

Above and right: Courtyards may be landscaped or hardscape and may feature outdoor furniture. Courtyards are shielded by ground-floor windows with direct access and views of the courtyard.

B. Design Standards

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courtyard type buildings are subject to the following as applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A. Building Site Width</th>
<th>Min (ft)</th>
<th>Max (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2, T4, N1, N2, N3, N4</td>
<td>25</td>
<td>300</td>
</tr>
<tr>
<td>T5, T6</td>
<td>15</td>
<td>200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Building Site Depth</th>
<th>Min (ft)</th>
<th>Max (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1, N2, N3, N4</td>
<td>20</td>
<td>250</td>
</tr>
<tr>
<td>T5, T6</td>
<td>15</td>
<td>200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Building Length</th>
<th>Min (ft)</th>
<th>Max (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1, N2, N3, N4</td>
<td>75</td>
<td>300</td>
</tr>
<tr>
<td>T5, T6</td>
<td>30</td>
<td>300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Front Yard</th>
<th>Min (ft)</th>
<th>Max (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T5, T6, N1, N2</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>T3</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. Street Side Yard</th>
<th>Min (ft)</th>
<th>Max (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T5, T6, N1, N2</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>T3</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F. Side Yard</th>
<th>Min (ft)</th>
<th>Max (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T5, T6, N1, N2</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>T3</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G. Rear Yard/Parking</th>
<th>Min (ft)</th>
<th>Max (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T5, T6, N1, N2</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>T3</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

| H. Facades exceeding 80 feet shall be designed with a vertical setback from the base of the building to the road line, at least 8" wide and 18" deep, giving the building an appearance of multiple attached buildings. Facades shall be composed of increments of 25% or less. Increments shall be created through projecting or recessing wall surfaces, changes in roofline, and placement of piers and pilasters. |

| I. Buildings on corner building sites shall be designed with two facades of equal architectural expression. |

| J. Facades along frontage lines shall apply frontage types per Section 5.3.2 of the zone standards. |

| K. Where ground floor residential is allowed, first floor living areas rather than sleeping or service rooms shall be oriented toward the street. Where the zone allows non-residential activity, retail or office space rather than service rooms shall be oriented toward the streets. |

| L. Building entries shall be at grade along the adjacent sidewalk or courtyard, as applicable. Units along the side street may have a second entry from the courtyard. Where ramps are required, their design shall be per the ADA requirements and per Section C.3 of the zone standards. |

| M. Parking spaces and access driveways shall be provided and located per Section C.2 of the zone. |

| N. One or more separate or interconnected courtyards shall be provided, with a total area equal to at least 15 percent of the building site area at least 20 ft wide. Courtyards shall not exceed 100 linear feet. |

| O. Units along side streets may enclose private open space only through the Yards and yards type (5.20.10). |
Summary Issue 4

Use Building Types to articulate potential

- Identify compatible building types and adjust to your realities: shallow lots?
- Standards for corridor side and neighborhood side
- Fully test each type for realistic/useful standards
Articulating, Blending Densities through Building Types

Shallow Site: busy corridor, houses behind

475 \times 110 = 52,250 \text{ SQ FT}

1.20 ACRES
Articulating, Blending Densities through Building Types

Make Blocks
Articulating, Blending Densities through Building Types

Select types and Lot the blocks

=34 UNITS

32 DUA AGGREGATE
Articulating, Blending Densities through Building Types

- 24 Courtyard Podium Units
- 2 Rowhouse Units
- 8 Upper Story Units + 7,000 SF Ground Floor Space

Add Types

=34 Units

32 DUA Aggregate
Articulating, Blending Densities through Building Types

- 6 MANSION APT UNITS
- 8 ROWHOUSE UNITS
- 8 UPPER STORY UNITS + 7,000 SF GR FLR SPACE

or, all surface parking approach

=22 UNITS

18.3 DUA AGGREGATE
Articulating, Blending Densities through Building Types

Large Site

700 X 900 = 630,000 SQ FT

14.46 ACRES
Articulating, Blending Densities through Building Types

Make Blocks
Articulating, Blending Densities through Building Types

Select types and lot each block

=121 UNITS

8.36 DUA AGGREGATE
Articulating, Blending Densities through Building Types

Add

+1 Flex Bldg
+2 Rowhouse Bldgs
Articulating, Blending Densities through Building Types

Add

+1 Flex Bldg
+2 Rowhouse Bldgs
+2 Courtyard Bldgs
+2 Triplexes
Articulating, Blending Densities through Building Types

Add

+1 Flex Bldg
+2 Rowhouse Bldgs
+2 Courtyard Bldgs
+2 Triplexes
+2 Courtyard Bldgs
+2 Quadplexes
Articulating, Blending Densities through Building Types

LARGE SITE

700 x 900
= 630,000 SQ FT
14.46 ACRES

121 units
5 Bldg Types
8.36 DUA AGGREGATE

Neighborhood Compatible
Articulated Neighds and Corridors: Appealing and Sustainable

- Suburban
  - House Bldgs
  - Duplex-Quadplex Bldgs
  - Courtyard Bldgs

- Urban
  - Mansion Apt Bldgs
  - Duplex-Quadplex Bldgs
  - Courtyard Bldgs
  - House Bldgs

- City Center
  - Courtyard Bldgs
  - Mansion Apt Bldgs
  - Flex Bldgs
  - Duplex-Quadplex Bldgs

Streets respond to varying contexts
Summary of Issue 5

Identify/Adjust Building types to fit your community

• Distill most important needs/issues into standards
• Preferences through clear examples not guidelines
• Provide Admin Procedures for Flexibility
Density Bonus

Conventional Method

- Max density allowed by zone +
  max 35%

  = New Max

  = 14 du/AC x 0.26 acres = 3.6 (4) units

+ 35% = 1.3 = 5 units total (18 du/AC)

Site: 75 x 150

= 11,250 sq ft (0.26 acres)

- MAX 14/AC

- W BONUS 18/AC

4 units

5 units

A few other things
Density Bonus

Form-Based Method

- Select Bldg Type with preferred density

- For more density, select next compatible Bldg Type = New Max

Site: 75 x 150
= 11,250 sq ft (0.26 acres)

MAX Quadplex

Quadplex 9-14/ac

Mansion Apt 20-31/ac

W BONUS Mansion Apt

6 du

8 du
Density Bonus

Conventional Method

W BONUS
18/AC

5 units

Form-Based Method

31/AC
Mansion Apt

Site: 75 x 150
= 11,250 sq ft (0.26 acres)

8 du
Last, Misperceptions about Form-Based Zoning

Dictates Architecture
Has to be applied throughout town
Isn’t zoning
Is all about graphics
Improves your golf score
A template that makes you fit your town to it
Only for greenfield development
Makes you insert high density residential
 Doesn’t address Land Use
Compels mixed-use of everything, everywhere
Requires all components even if you don’t want them all
## Classifying and Clarifying Different Approaches

<table>
<thead>
<tr>
<th>Typical Approaches to Zoning Urban Form (from least to most effective)</th>
<th>What Should this Approach be Called?</th>
<th>Organizing Principle</th>
<th>New Components Created and Included</th>
<th>Is the Overall Code Reorganized for Usability?</th>
<th>Likely Cost Range</th>
<th>Considerations for this Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adding graphics to a Euclidean, use-based code</td>
<td>Graphics-Based Code</td>
<td>Use</td>
<td>Primarily additional graphics and tables, content has minor changes only</td>
<td>Not in this example</td>
<td>Low, Primarily because it is a graphic design-usability exercise only</td>
<td>This is completely ineffective and should be avoided. This is what you will often get if your budget is too low for a true FBC. Will look good, but will not produce predictable results. Does not address obstacles for good development or process-related issues inherent in most zoning codes.</td>
</tr>
<tr>
<td>2. Adding design guidelines/site planning guidelines to a Euclidean, use-based code</td>
<td>Design Guidelines or Design Standards</td>
<td>Use</td>
<td>Components similar to FBC components may be created, but they do not replace the code so they do not need to be as carefully vetted and many times create conflicts within the zoning code</td>
<td>No</td>
<td>Low, Primarily because it does not address the problems with underlying zoning</td>
<td>Mostly ineffective due to typical issue inherent in existing code that are not addressed and may even contradict zoning. Adding another layer of regulations that confuses intent and negatively impacts usability and administration</td>
</tr>
<tr>
<td>3. Adding mixed use zones to a Euclidean, use-based code</td>
<td>Targeted Mixed Use Zone Application</td>
<td>Use</td>
<td>New base zones and zone standards only</td>
<td>No</td>
<td>Low, Primarily because this approach entails creating only new base zones</td>
<td>Effectiveness depends highly on quality and clarity of existing code and development review process. If administration and the code document structure is good, and detailed visioning is completed, and the mixed use zones are not over-simplified this can begin to show good results. Existing parking, use tables, landscape standards, etc. must be vetted</td>
</tr>
<tr>
<td>4. Adding graphics, reorganizing code, cleaning up administration, and minor changes to development standards</td>
<td>Code Clean Up and Re-organization</td>
<td>Use</td>
<td>Mostly just translating existing information into tables and creating drawings to support existing code information</td>
<td>Yes</td>
<td>Medium to high depending on scale of city or county</td>
<td>Addresses many of the issues above, but ultimately still has use as an organizing principle, which limits the effectiveness of the code and stops it short of being an FBC. Does not typically complete documentation and analysis of place to extract the DNA that becomes the basis for the code but rather uses existing zone standards as starting point and makes changes to those</td>
</tr>
<tr>
<td>5. Optional Form-Based Code overlay</td>
<td>Form-Based Code Overlay</td>
<td>Form</td>
<td>All typical FBC elements included, process rethought for FBC application</td>
<td>No</td>
<td>Low to Medium, depending primarily on extent of visioning completed</td>
<td>Administration, parking, landscape, and all other elements within code must be vetted and coordinated with intent of the FBC and potentially included in the FBC and replaced when the overlay is triggered</td>
</tr>
<tr>
<td>6. Integrating a complete Form-Based Code within a pre-existing zoning code</td>
<td>Parallel Form-Based Code</td>
<td>Form for FBC section, use for the rest of the pre-existing code</td>
<td>All typical FBC elements included, process and all general standards (parking, landscaping, etc.) rethought for FBC application</td>
<td>Sometimes</td>
<td>Medium; Primarily due to the fact that a complete, parallel code is being created to replace the existing code in targeted areas</td>
<td>Administration, parking, landscape, and all other elements within code must be vetted and coordinated with intent of the FBC Division. If you are doing a complete code rewrite and you choose this approach, you are writing two complete, parallel code documents which is not a good use of resources. This approach is still sending a message that the default is drivable suburban development and that FBCs are the exception</td>
</tr>
<tr>
<td>7. Using Form as an organizing principle for the entire zoning code and using Form-Based Code components as the driver for your Table of Contents</td>
<td>Citywide Form-Based Code</td>
<td>Form</td>
<td>All typical FBC elements included, process and all general standards (parking, landscaping, etc.) rethought for FBC application, admin and procedures, variances, etc. are all rethought to support the FBC</td>
<td>Yes</td>
<td>High, Slightly higher than #4. Due to charrettes for FBC Focus Areas, and extensive documentation and analysis phase completed, and that all standards are carefully vetted</td>
<td>In this approach, the structure of the entire zoning code is completely rethought, a new operating system is established, and thus the entire table of contents of code document is structured with a form-first philosophy. Every last bit of content from the pre-existing code is vetted for it applicability to the form-first operating system before it is transferred so that it does not compromise the intent. This approach is perfect for a city that has made a strong commitment in its city policies to promote smarter, more sustainable growth. Let Euclidean zoning regulate drivable suburban contexts, and the FBC regulate walkable urban contexts. It is called citywide Form-Based Code not because the entire city has Form-Based Coding applied, but rather the entire city has been assessed, FBC applied to where it make sense, and the FBC application can easily spread</td>
</tr>
</tbody>
</table>
Form-Based Zoning for Infill Sites and Corridors

Tony Perez