

FORM-BASED CODE - TECHNIQUES FOR ENCODING URBAN ENVIRONMENTS

MISSION?

Cities have to move to a new system.
They should look at the streets they like
and the public spaces they like and then
write the rules to get more of what they
like and less of what they don't.
Conventional zoning doesn't do that. It
just gives a use and a density and then
you hope for the best.

- Peter Katz -

FORM-BASED CODES

Hierarchy in Urban Planning and
Urban Design

Development Strategies

Masterplan

Design Briefs

Development Framework

Regulating Plan

What is a Form-Based Code?

Principles of FBCs

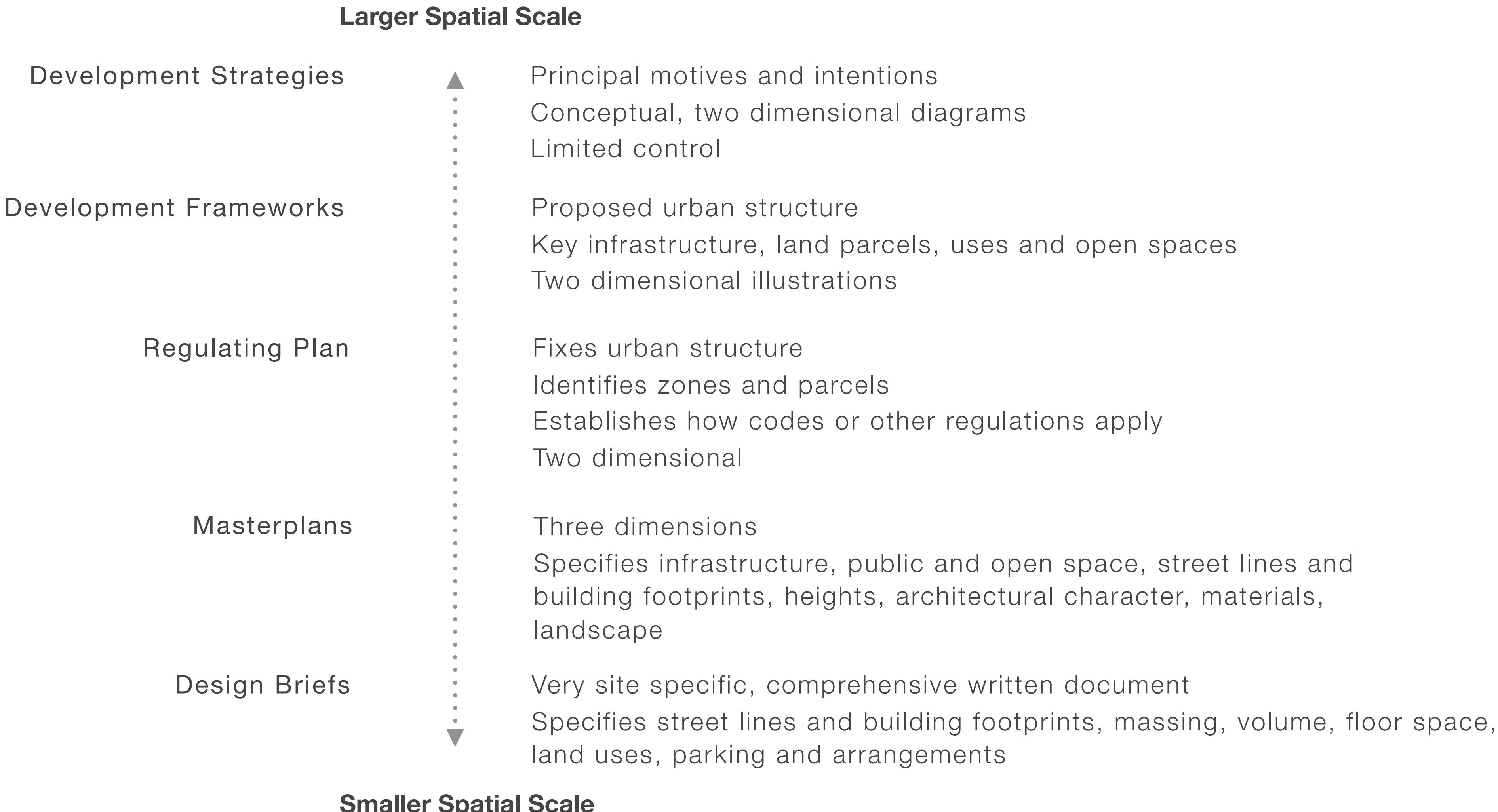
Components

Example Codes

Benefits and Drawbacks

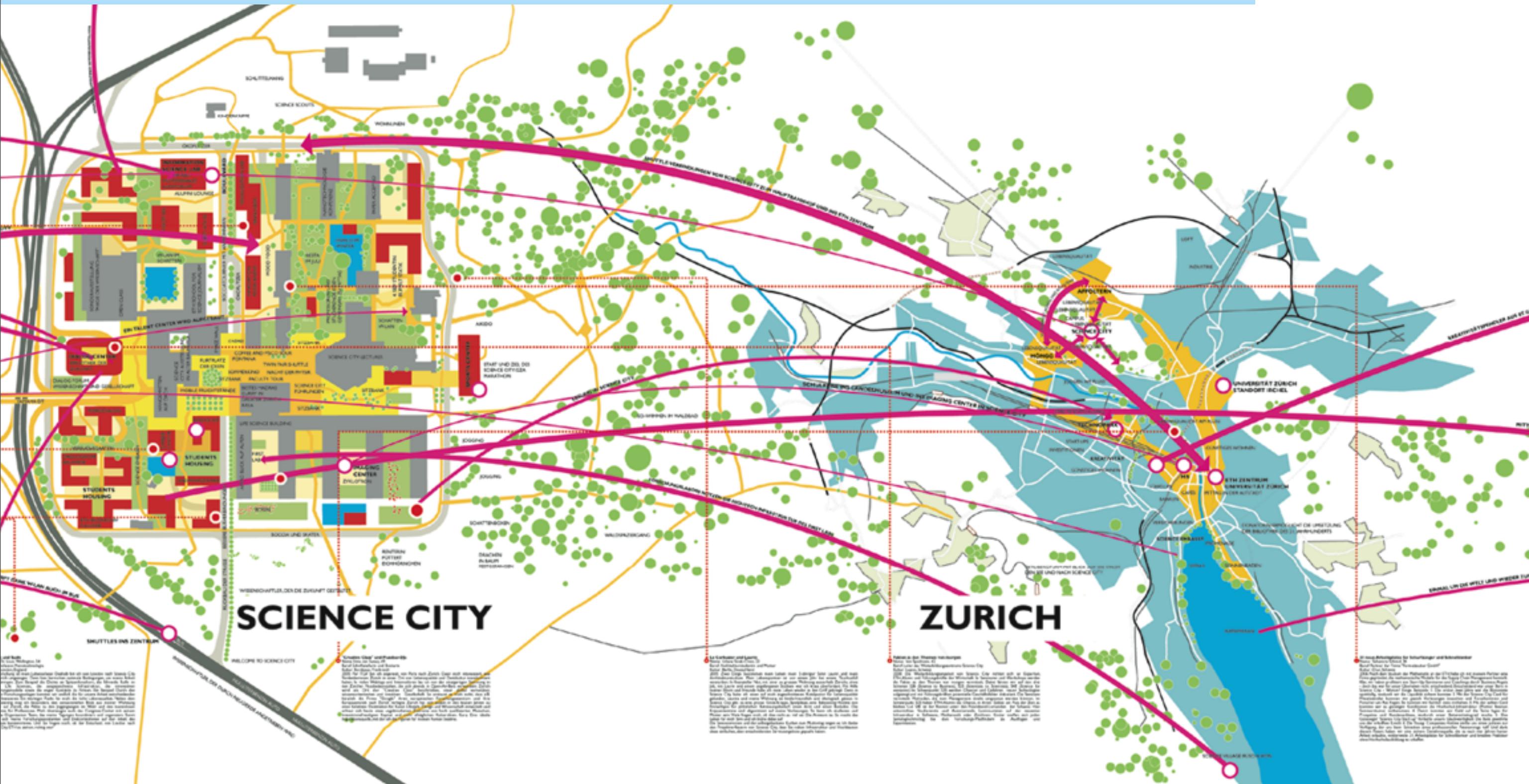
Relevance of FBCs for Urban Modeling

HIERARCHY IN URBAN PLANNING AND URBAN DESIGN



Adapted from: Public Places - Urban Spaces, Carmona et. al , Elsevier Ltd., 2010

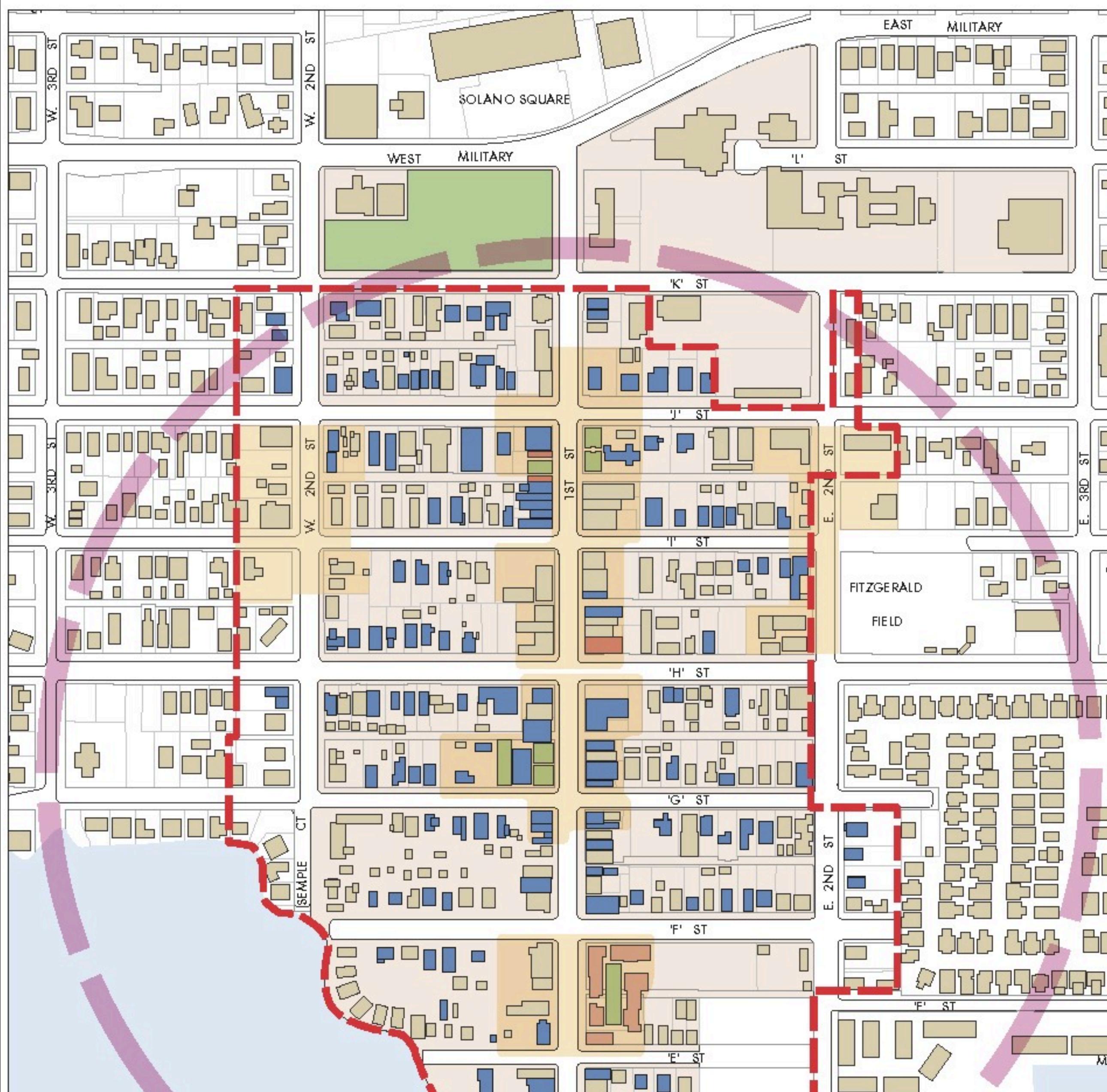
DEVELOPMENT STRATEGIES



Static strategy maps help to create a mutual understanding between stakeholders by creating a “big picture” visually capturing the relationships between them.

Burkhard, R.A.: Visualize Desires, not Cities. In: Thierstein, A., Förster, A. (eds.) The image and the region, Lars Müller Publishers, Baden, pp. 169--180 (2008)

DEVELOPMENT FRAMEWORK



- Buildings of Historical Significance
- Plan Initiative Areas
- Proposed Buildings
- Public Open Spaces
- Proposed Improvement Areas
- Existing Building Fabric
- Five Minute walking radius
- Plan Area

Benicia , CA Downtown Mixed Use Master Plan, [http://www.formbasedcodes.org/files/BeniciaCA_DMU_FBC\(2\).pdf](http://www.formbasedcodes.org/files/BeniciaCA_DMU_FBC(2).pdf)

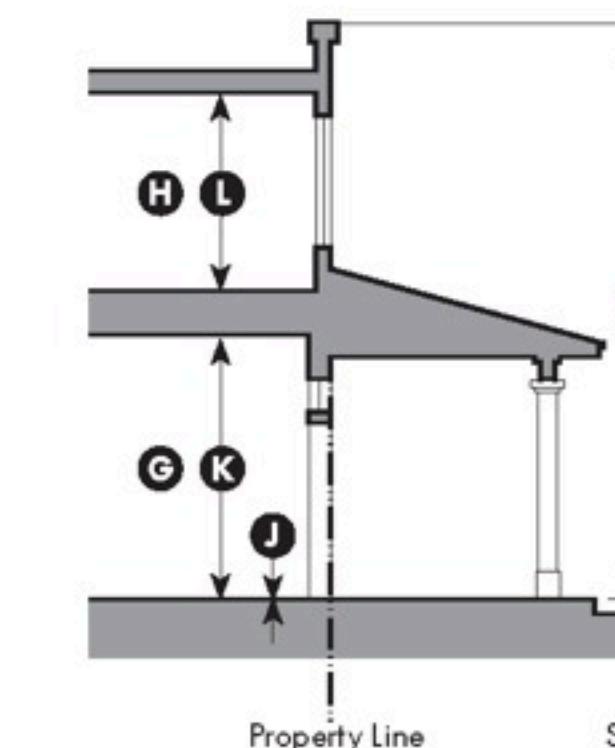
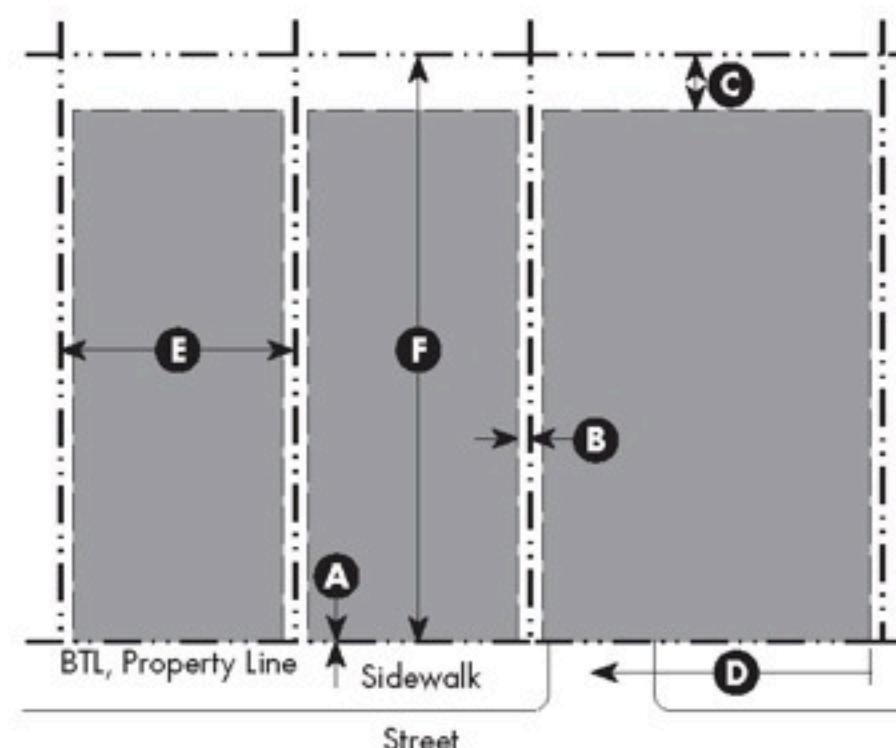
REGULATING PLAN



Zoning Districts

- Town Core
- Town Core-Open
- Neighborhood General
- Neighborhood General- Open
- Public & Semi-Public

Town Core-Open (TC-O) Standards



Key

- | | |
|-----------------------|------------------|
| — Property Line | --- Setback Line |
| — Build-to Line (BTL) | ■ Building Area |

Benicia , CA Downtown Mixed Use Master Plan, [http://www.formbasedcodes.org/files/BeniciaCA_DMU_FBC\(2\).pdf](http://www.formbasedcodes.org/files/BeniciaCA_DMU_FBC(2).pdf)

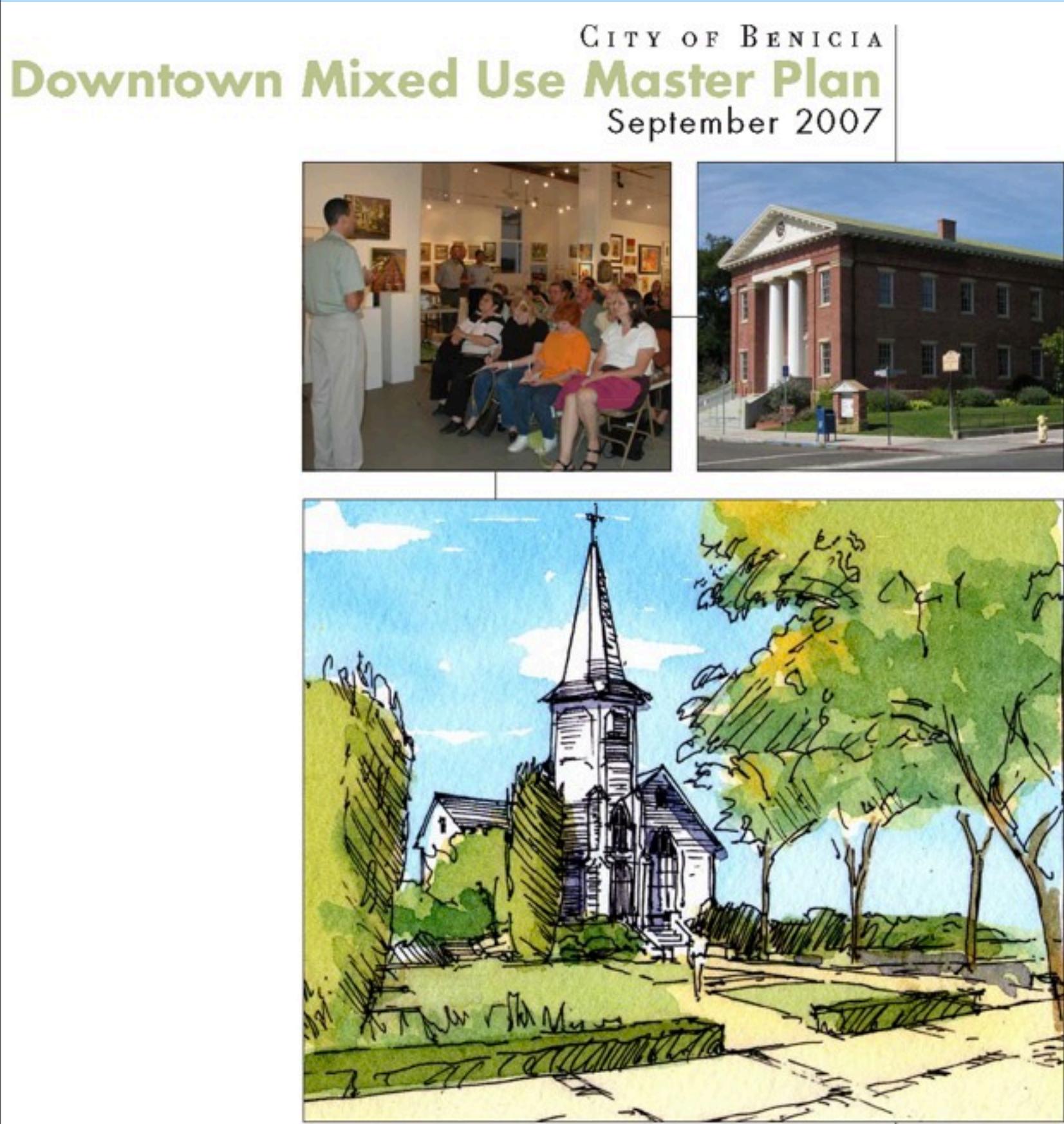
MASTERPLAN

ETH Science City Masterplan



<http://archiv.ethlife.ethz.ch/articles/campuslife/scmasterpraes.html>, model of Prof. Kees Christiaanse

DESIGN BRIEFS



Chapter 1: Introduction

Vision for the First Street District	1-1
Location and Overview	1-2
Summary of Process	1-3
Plan Organization	1-5

Chapter 2: Analysis and Background

Introduction	2-1
Historical Analysis	2-2
Primary Challenges	2-3
Key Opportunities	2-5

Chapter 3: Design Proposals

Introduction	3-1
First Street Recommendations	3-2
Neighborhood Centers	3-9
Mixed-Use Strategies for Historic Neighborhoods	3-10
Circulation and Transportation	3-11
Implementation Strategies	3-16

Chapter 4: Form-Based Code

Introduction	4-1
Regulating Plan	4-3
Zone Descriptions	4-4
Town Core (TC) Standards	4-5
Town Core - Open (TC-O) Standards	4-11
Neighborhood General (NG) Standards	4-17
Neighborhood General - Open (NG-O) Standards	4-21
Additional Standards	4-25
Frontage Types	4-26
Glossary	4-27

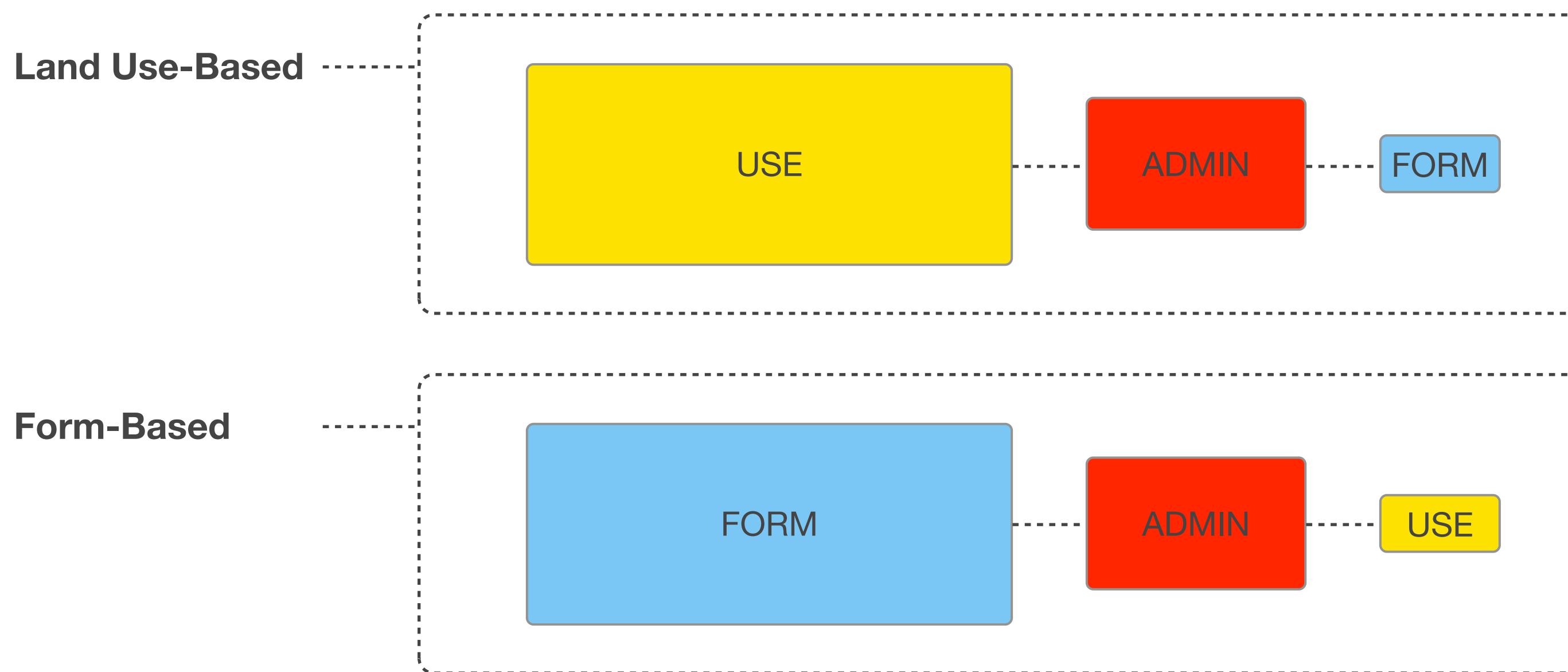
Chapter 5: Appendix

Appendix A: Market Conditions and Recommendations	5-1
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FORM-BASED CODES

A method of regulating urban development to achieve a specific form.

- Form Based Code Institute -



After: Chris Brewster, Dan Jarrell, Scott Allen (MARC Roundtable, March 5, 2009)

KEY DIFFERENCES

Traditional Zoning

Emphasis on use

Maps are of zone districts

Emphasis on individual uses of property, rigid use of lot size, and building placement

Segregation of land uses

Uniformity in neighborhoods

Limited ability to effect change

Design standards are add-ons

Setbacks

Often hard to understand, legal texts

Form-based Codes

Emphasis on community / neighborhood / social life in quarter

Maps are of neighborhoods / streets / blocks

Emphasis on building relationships and on fitting building to its surroundings

Mixed uses

Diversity in neighborhoods

Ability to transform or preserve

Design standards are fundamental

Build-to lines

Simple diagrams explaining parametrics

Adapted from: Form Based Codes, a Practical Guide, LSL Planning, Inc.

EUCLIDEAN ZONING

Problems with Euclidean Zoning

Traditional zoning are describing primarily minimum requirements, which may limit creativity and adaptability...

Primary regulates use

Not user friendly/complex

Not flexible

Leads to mediocrity & conformity

Minimum requirements instead of desire

Isolates different uses



Photograph: Matthew Trump, Prospect New Town,
new urbanist development in Longmont, Colorado.

AWARENESS I

The New Urbanism Debate

FCBs and Smart Code are specifically applied for New Urbanism (NU) projects.

NU is credited to have developed frameworks against urban sprawl.

However NU concepts highly focus on traditionalists' architectural or urban development schemes.

In Switzerland and Germany NU is being criticized for being backward oriented.

Further NU sees the cottage village as nucleus for urban (re-)development.

PRINCIPLES OF FBCS

1. Vision-Centered
2. Priority-Driven
3. Place-Based
4. Regionally Diverse
5. Consequential
6. Precise
7. Integrated
8. Predictable
9. Comprehensible
10. Adjustable

Adapted from: Form-Based Codes, Parolek et al, 2008

COMPONENTS OF FBC

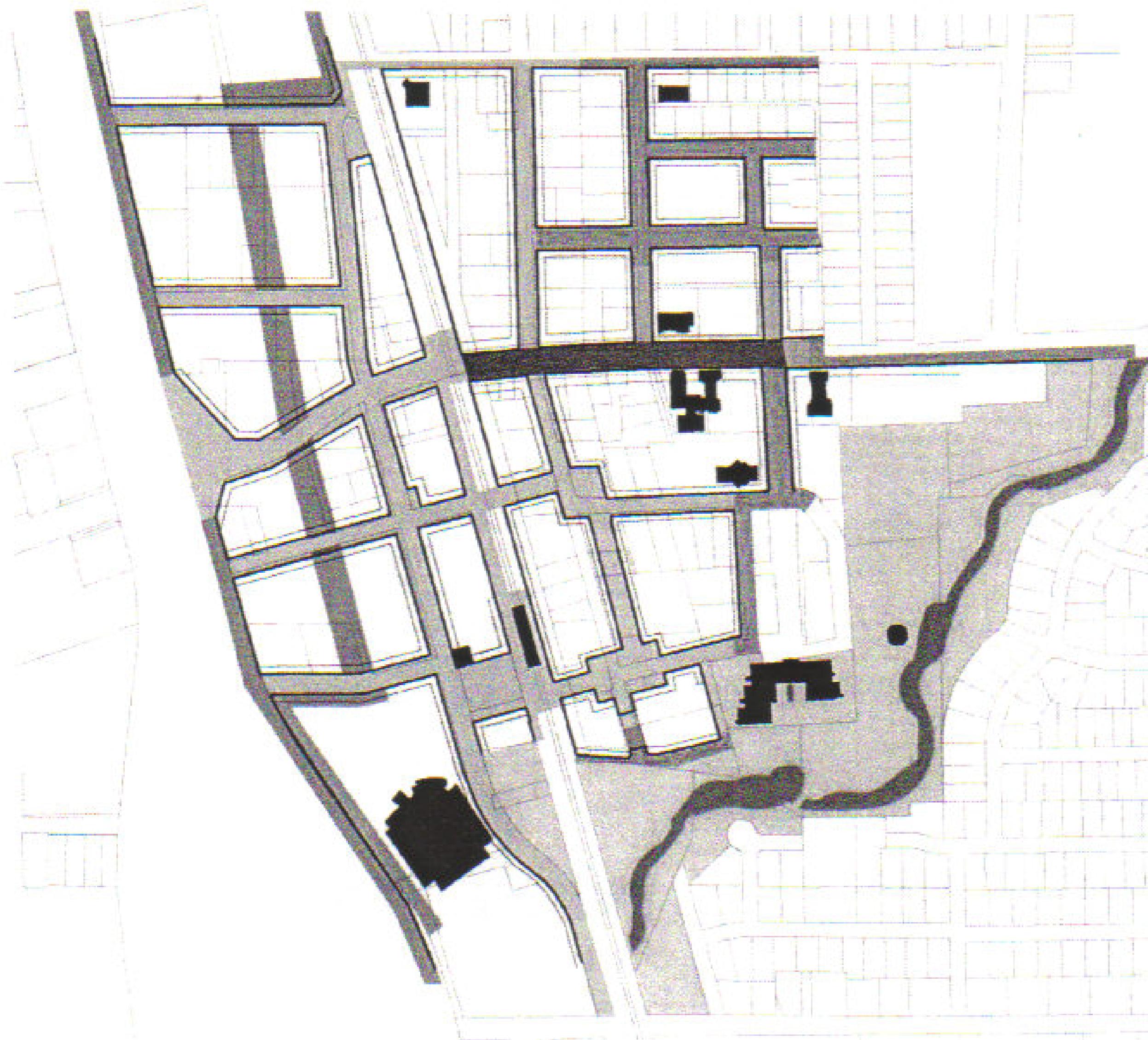
The Regulating Plan
Public Space Standards
Building Form Standards
Frontage Type Standards
Block Standards
Building Type Standards
Architectural Standards

FBC EXAMPLE: SMART CODE FRAMEWORK

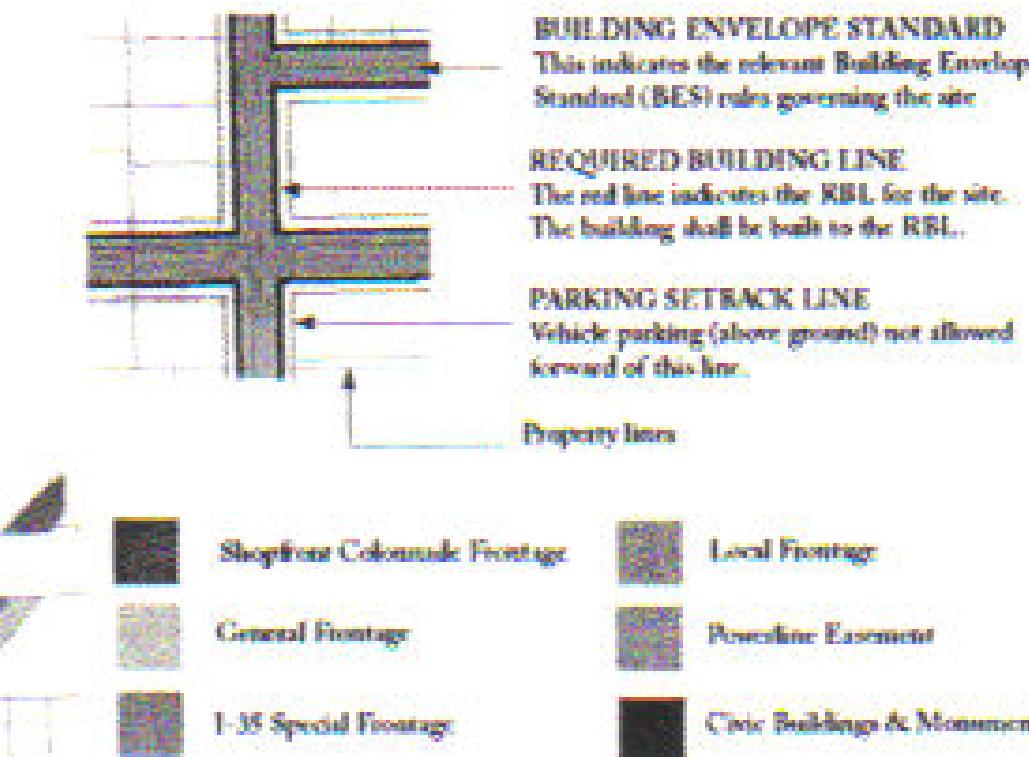
SMARTCODE
VERSION 9.2

The Town Paper
Publisher

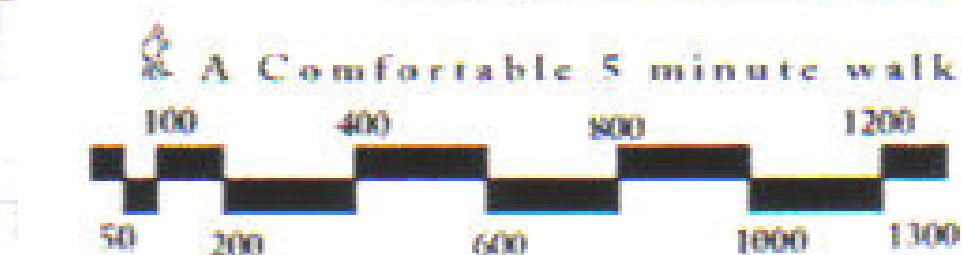
STREET-BASED



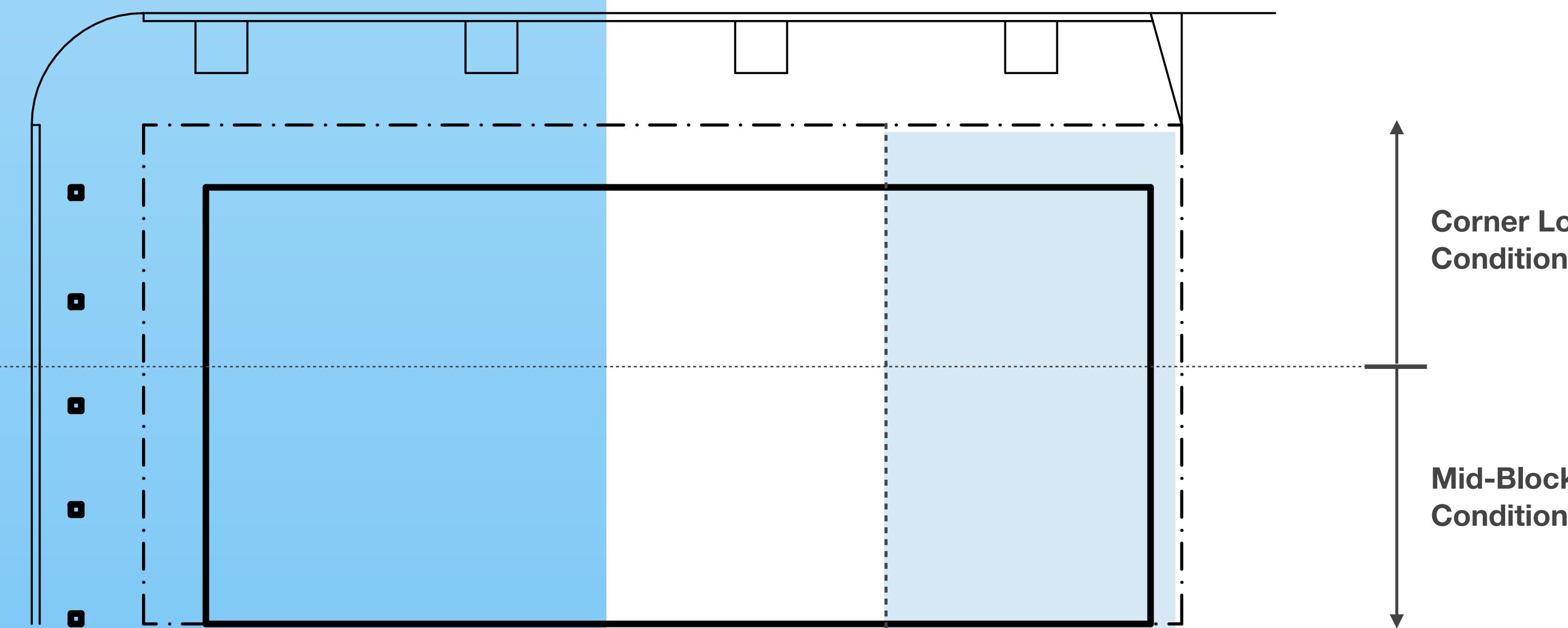
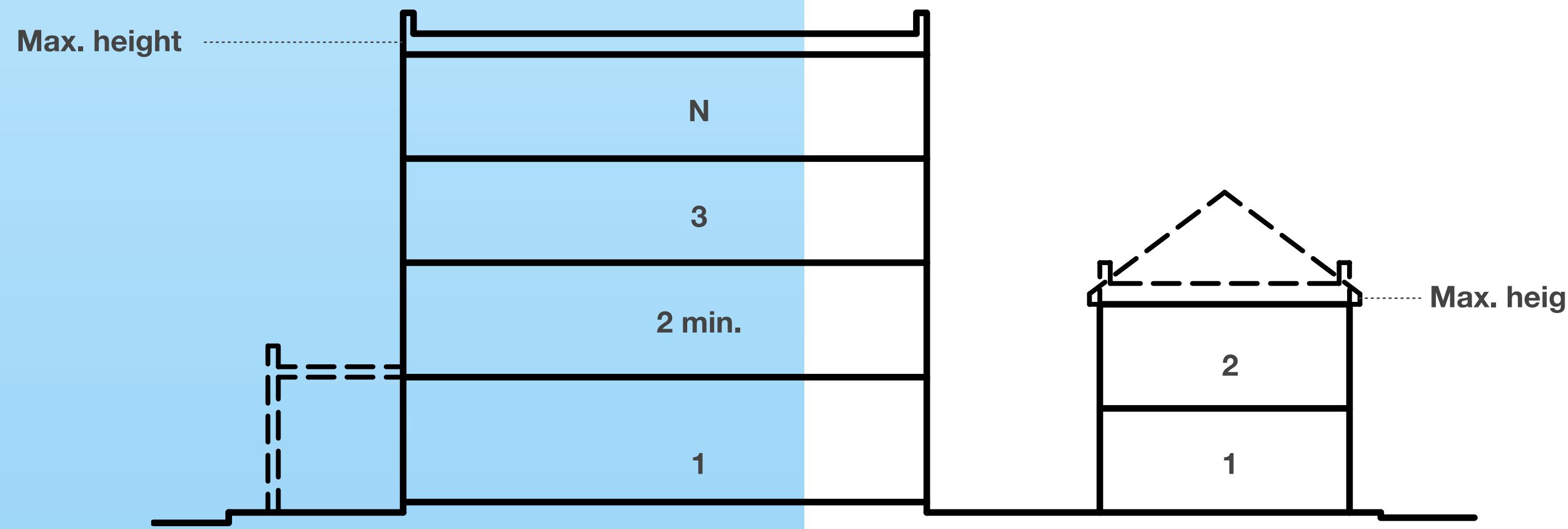
Understanding the Regulating Plan



Farmers Branch Station Area
Regulating Plan B

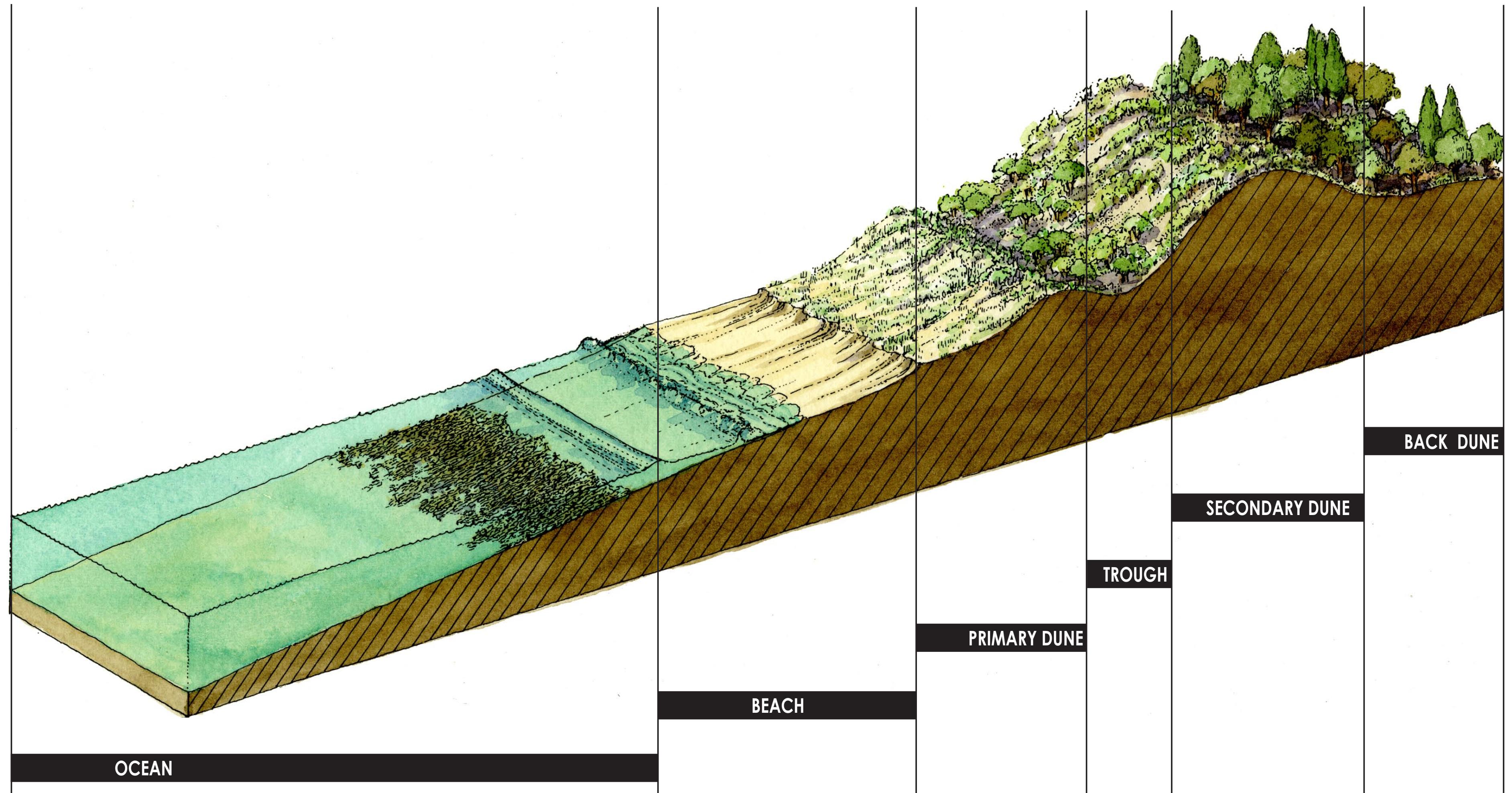


BUILDING TYPE-BASED



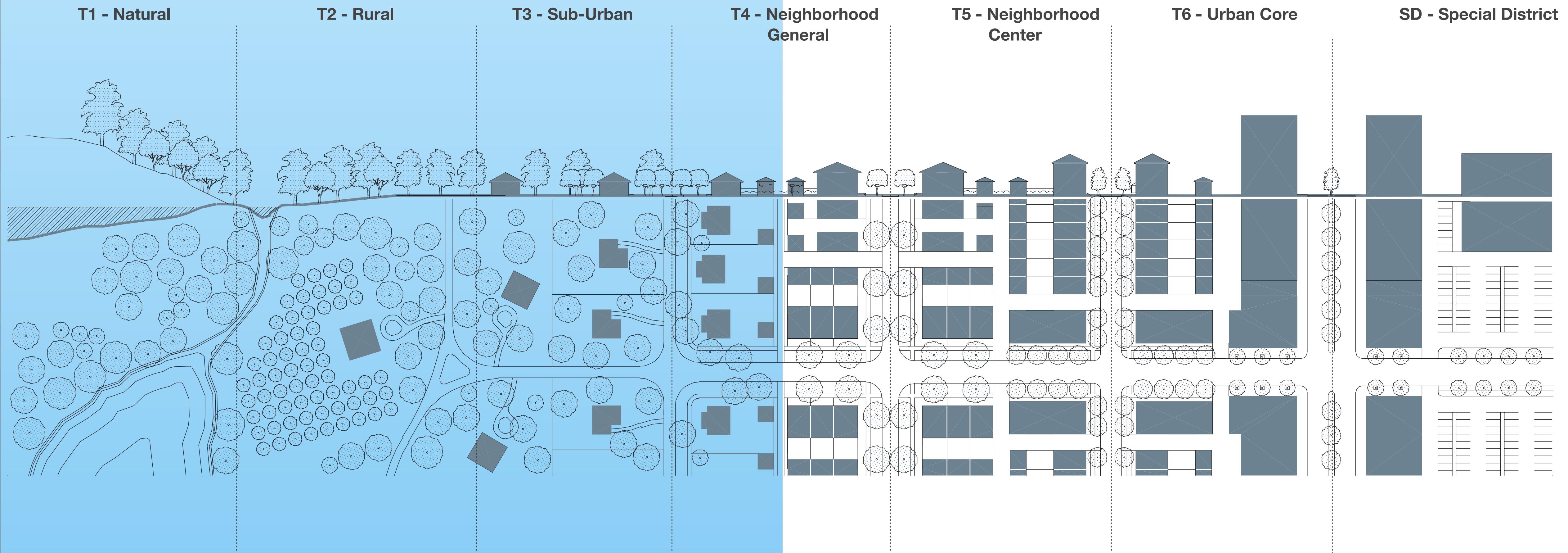
Source: SmartCode Handbook v. 9.2

TRANSECT-BASED



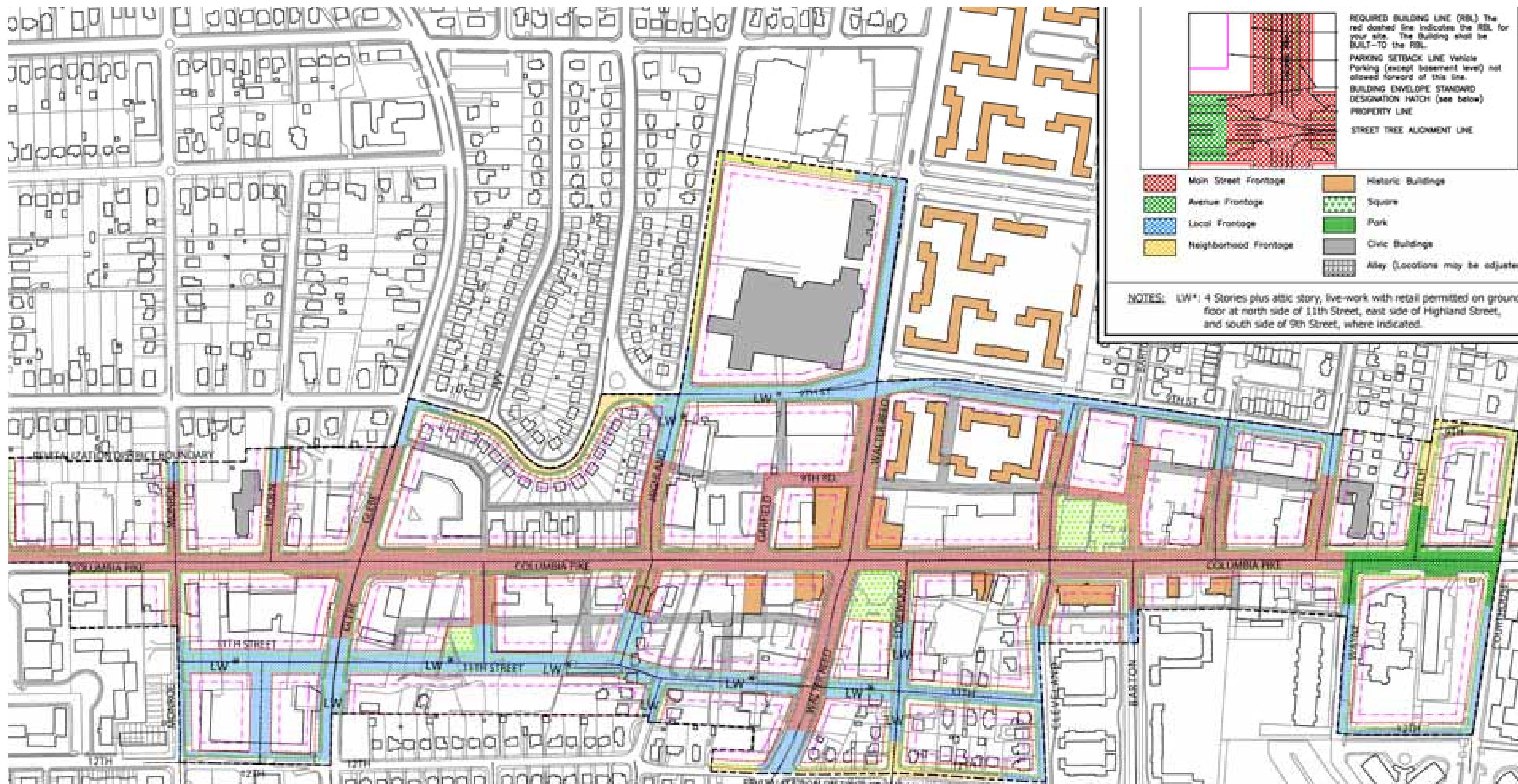
Source: SmartCode Handbook v. 9.2

TRANSECT-BASED



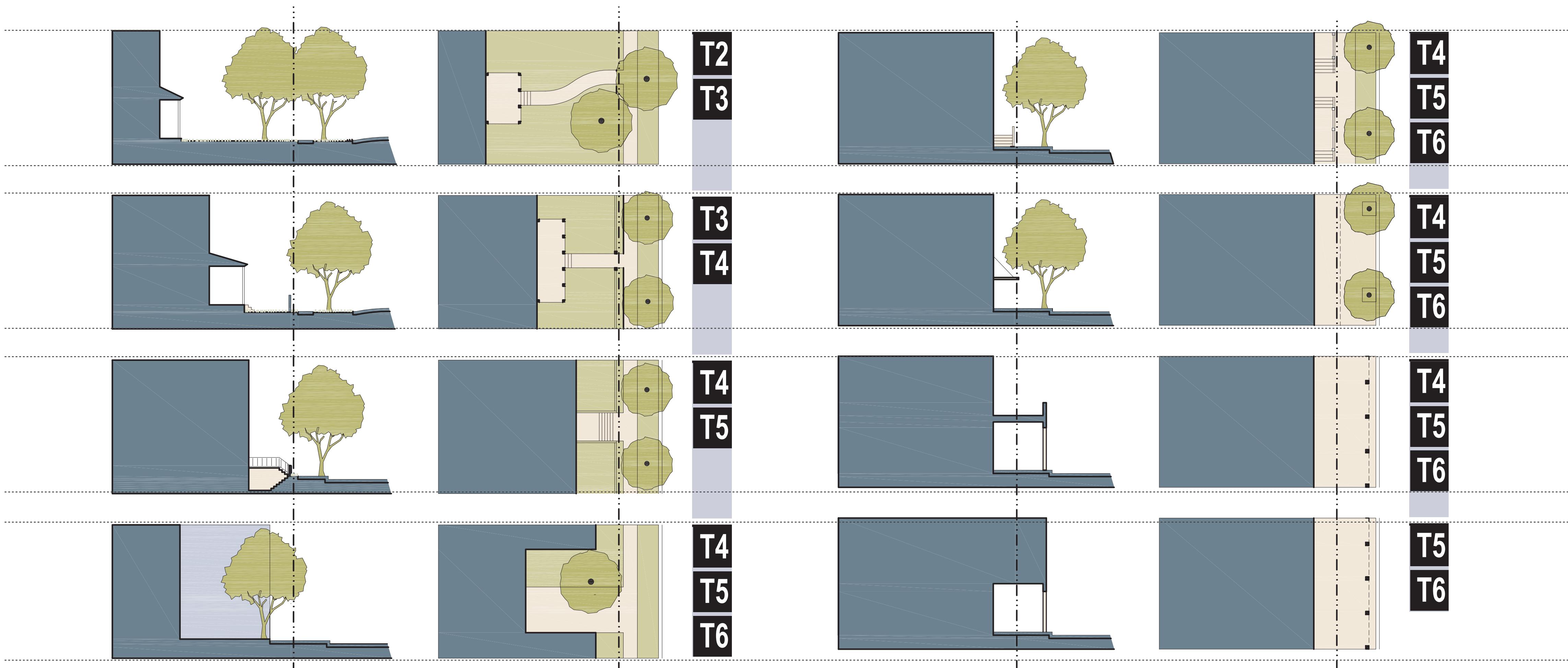
Source: SmartCode Handbook v. 9.2

FRONTAGE-BASED



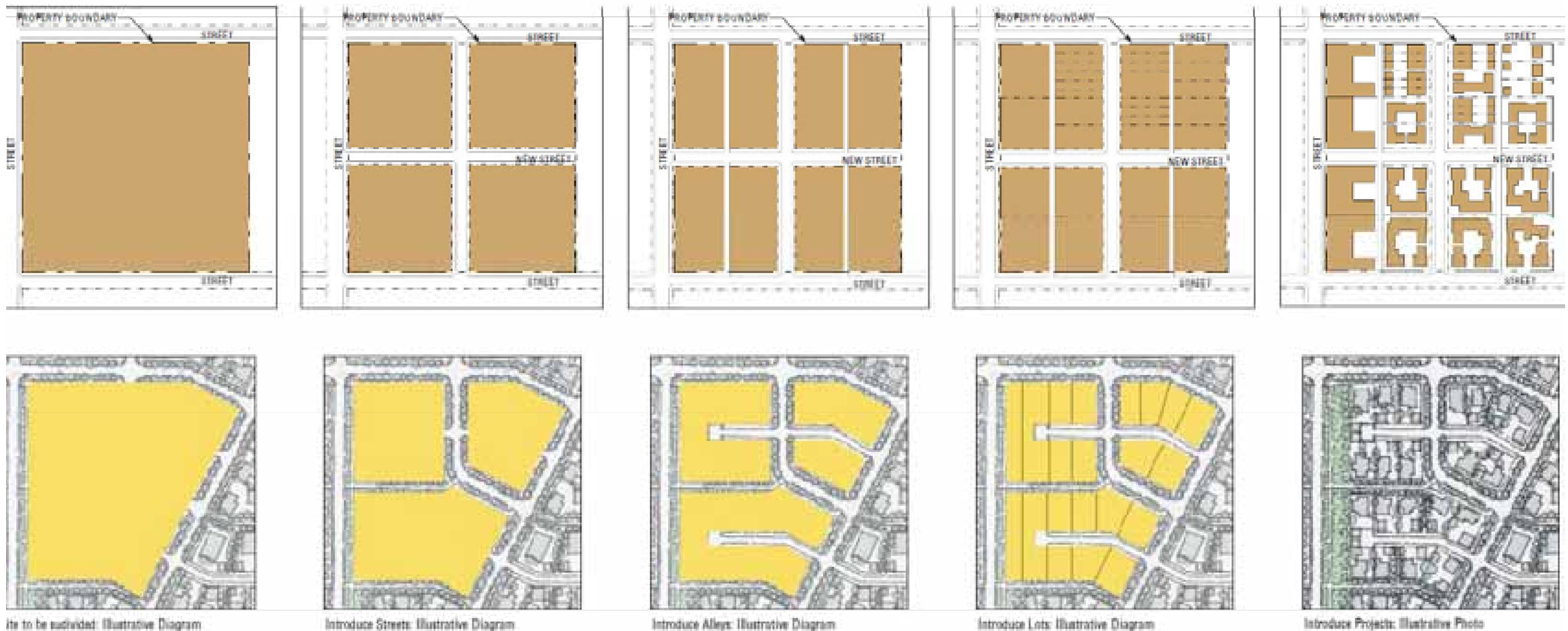
Source: Columbia Pike Code, Arlington County, VA

FRONTAGE TYPE



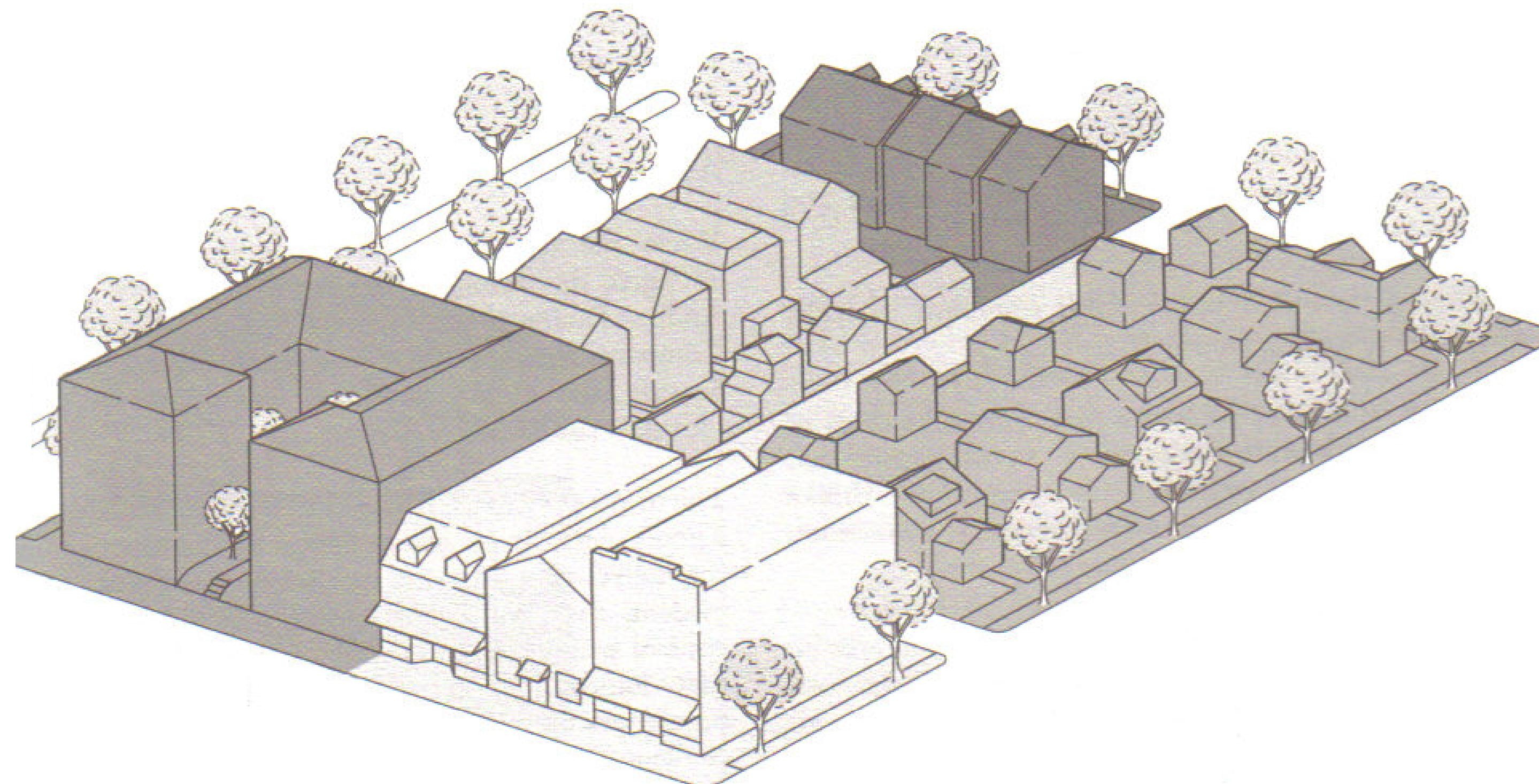
Source: SmartCode Handbook v. 9.2

BLOCK



Uptown Whittier, CA

BLOCK STANDARDS



Source: A Guidebook to New Urbanism in Florida, 2005



PUBLIC SPACES

Plazas, Squares, Circles and Parks

Plazas

Local plazas are the informal and cultural nucleus of the local area, providing a safe and open space at the heart of the community. The plaza is intended to be a hub for social interaction, leisure and recreation. Local areas will also define the spaces while providing areas for meeting and services, and no external area for activities. In addition, where no plaza is set in use it is available for temporary parking. The external design of plazas will incorporate this vision into the visual identity and programming approach.

Local Plaza Right: Local plazas are the informal and cultural nucleus of the local area, providing a safe and open space at the heart of the community. The plaza is intended to be a hub for social interaction, leisure and recreation. Local areas will also define the spaces while providing areas for meeting and services, and no external area for activities. In addition, where no plaza is set in use it is available for temporary parking. The external design of plazas will incorporate this vision into the visual identity and programming approach.

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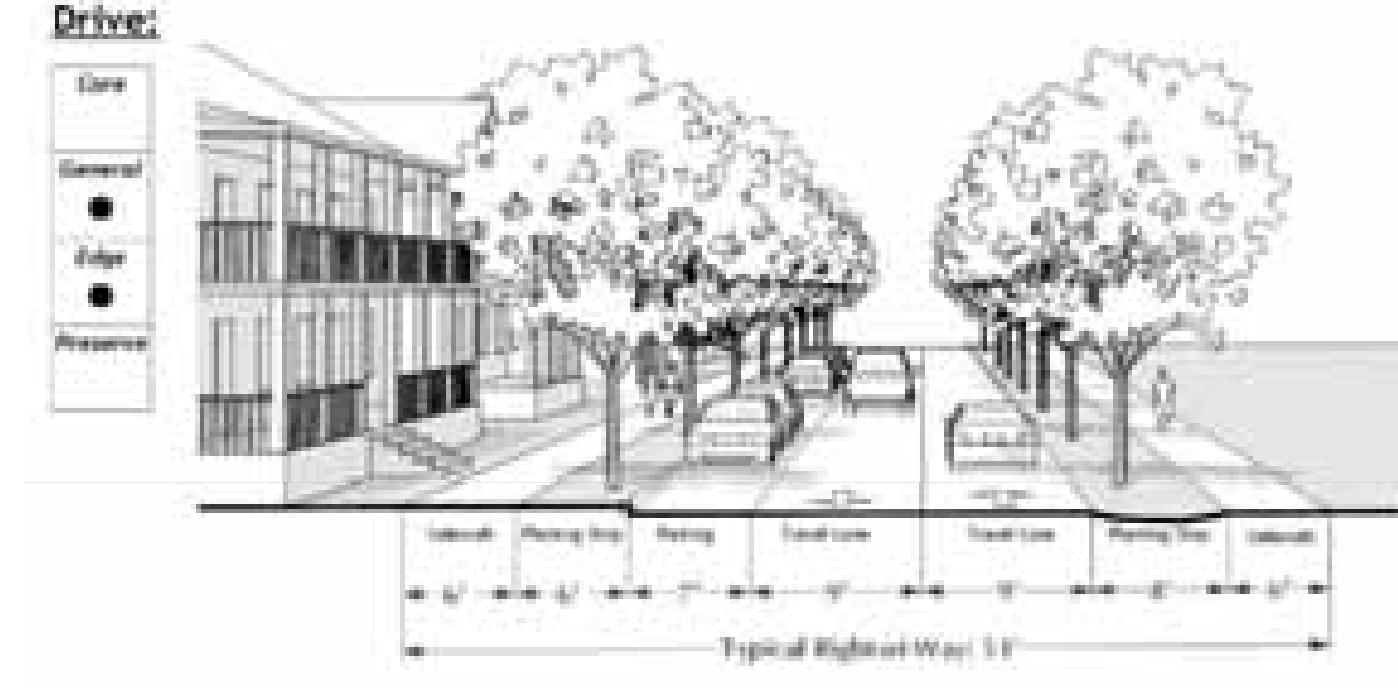
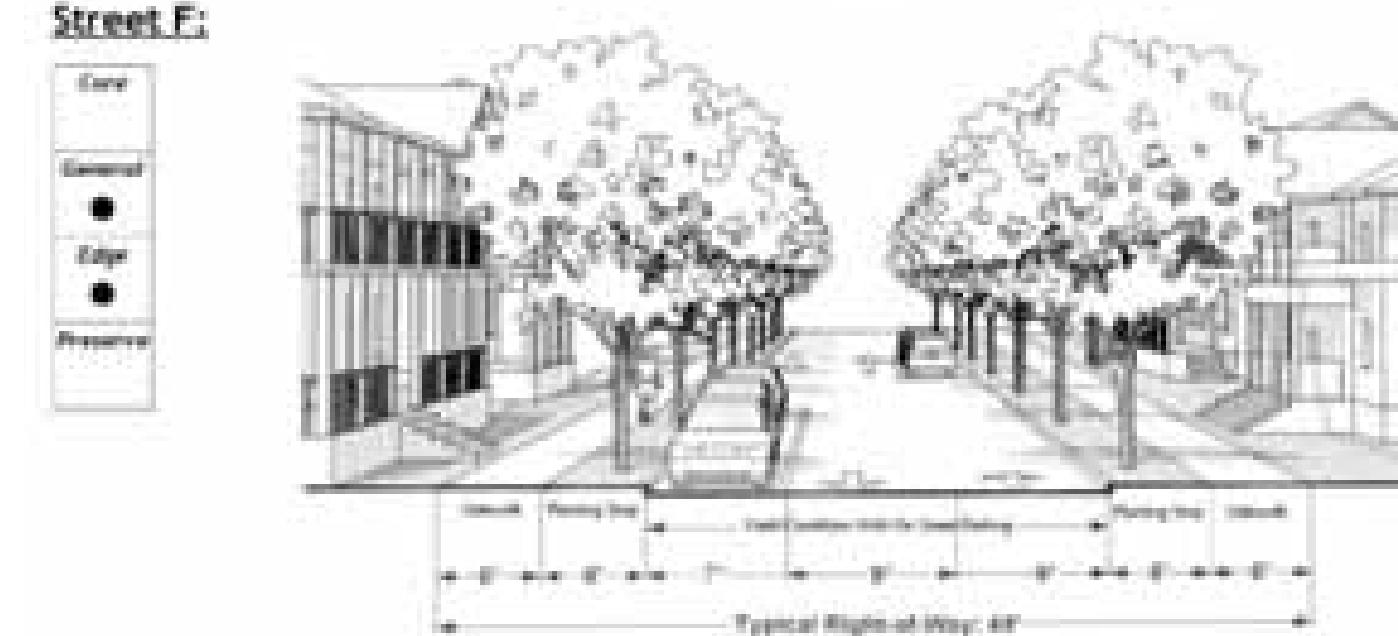
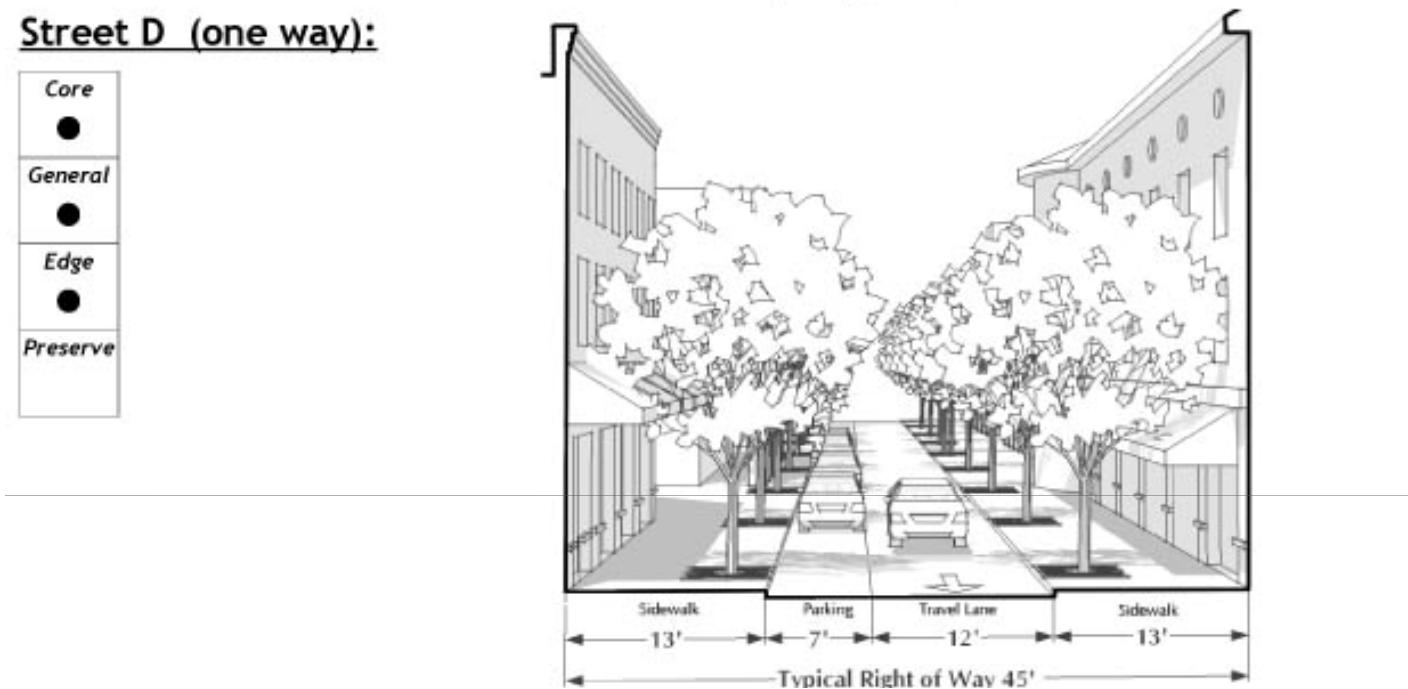
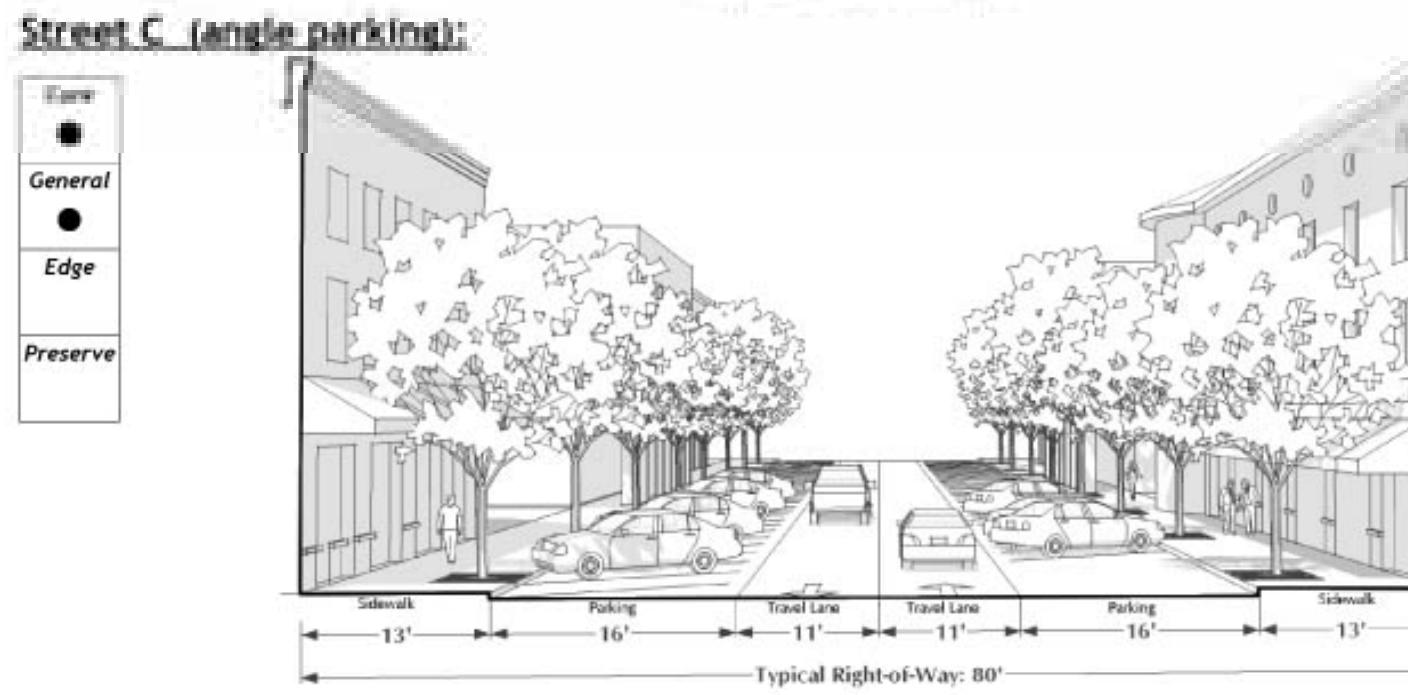
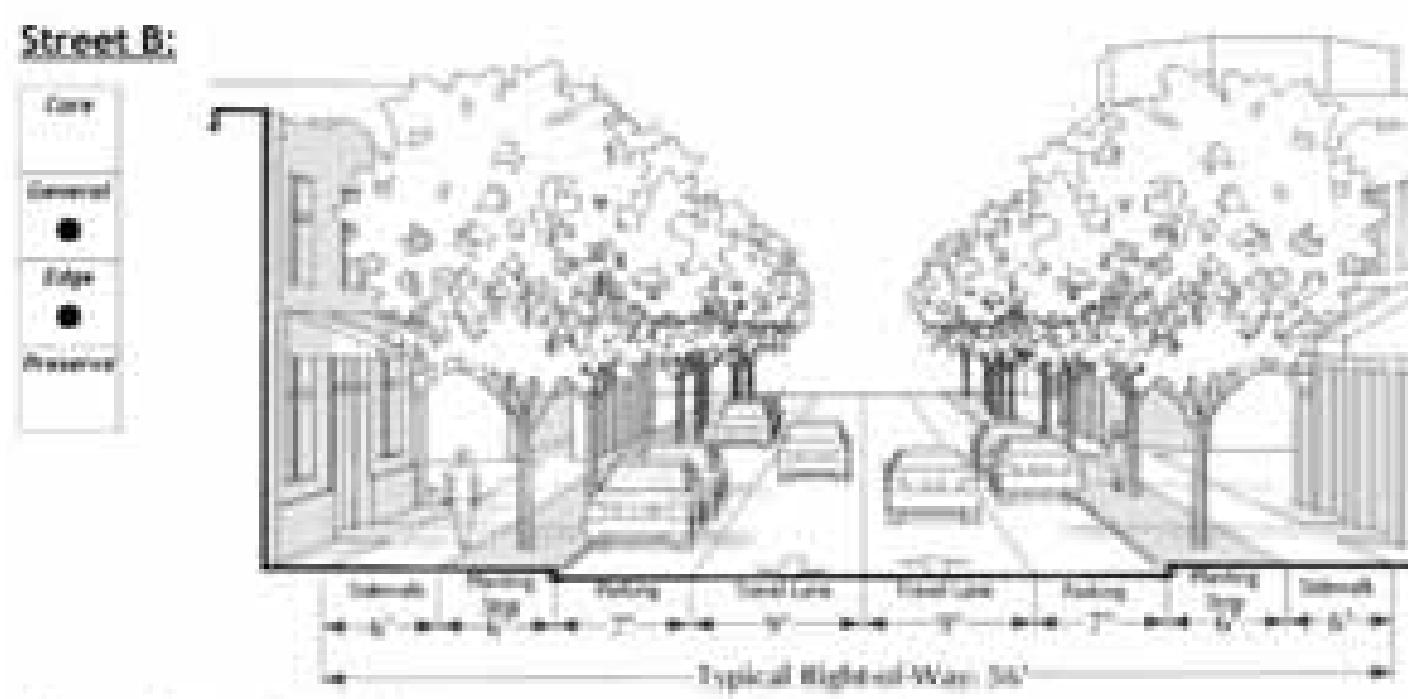
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Plazas Details

Source: Santa Ana Renaissance, CA

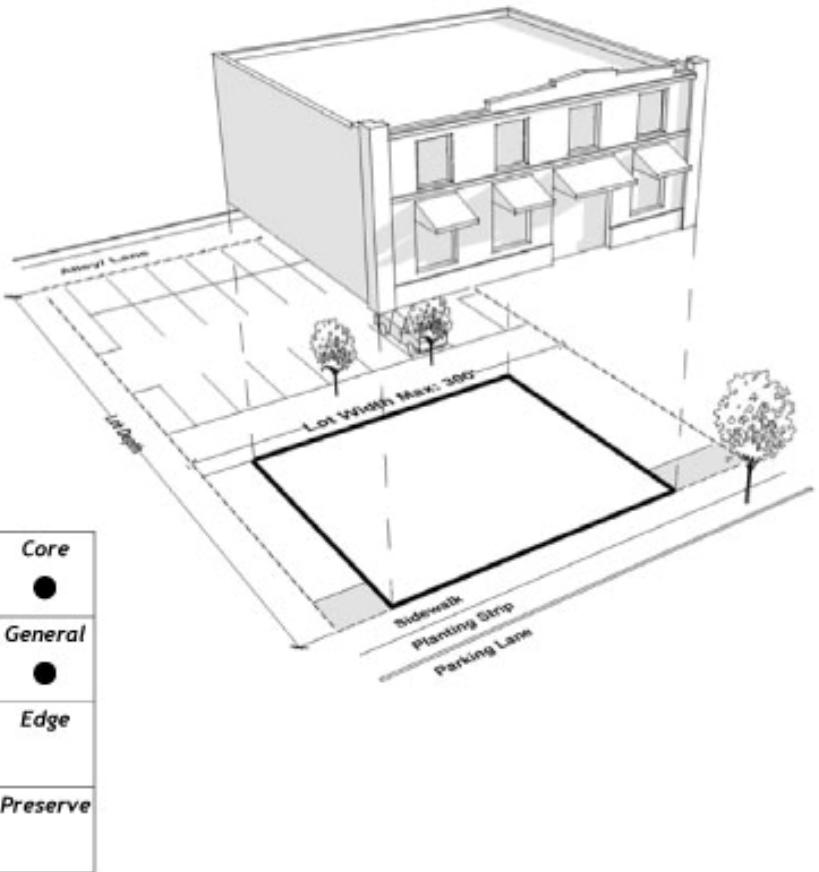
STREET TYPES



Source: Sarasota County FBC, FL, for Mixed-use Infill Development, by Kohl & Partners and Spikowski Planning Assoc.

BUILDING TYPES

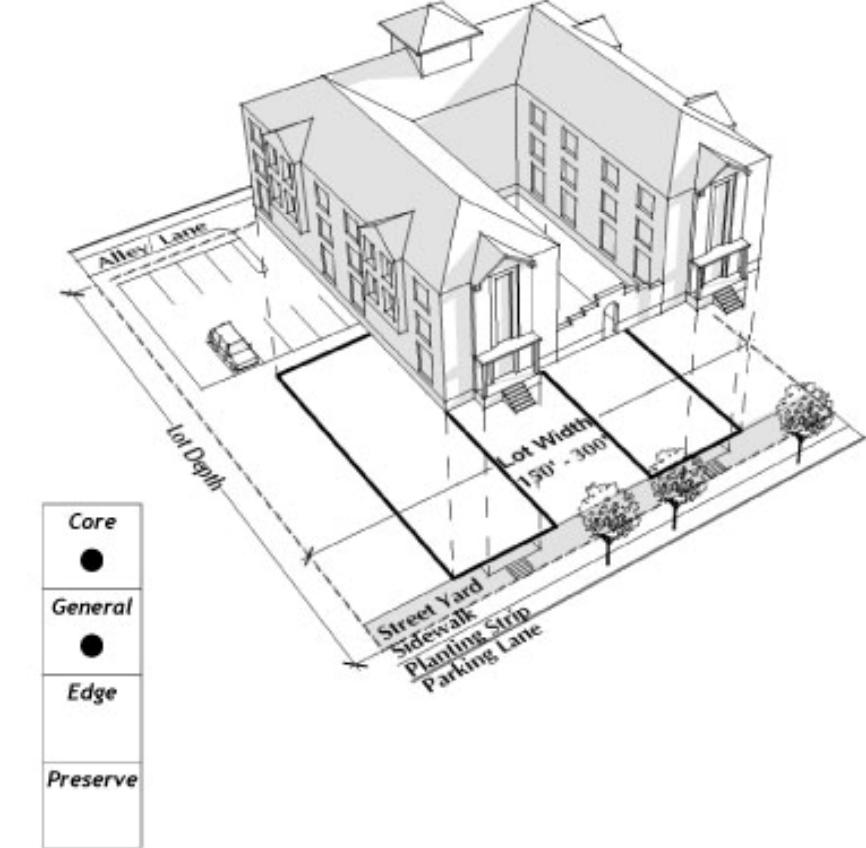
Mixed-Use Building Lot (MU):



Character Examples:



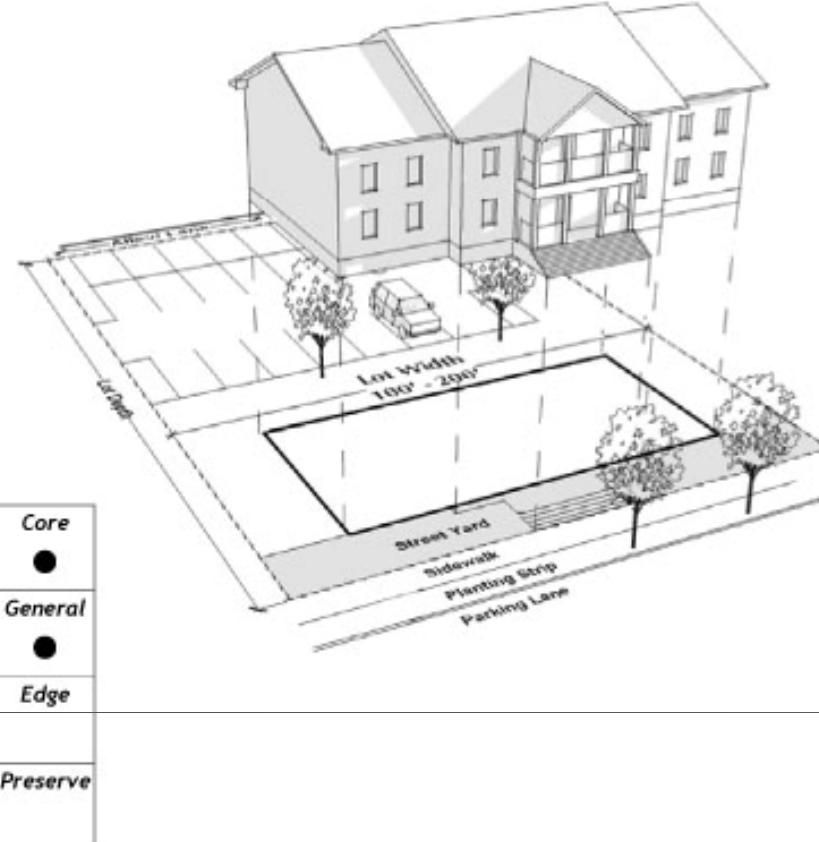
Courtyard Building Lot (CO):



Character Examples:



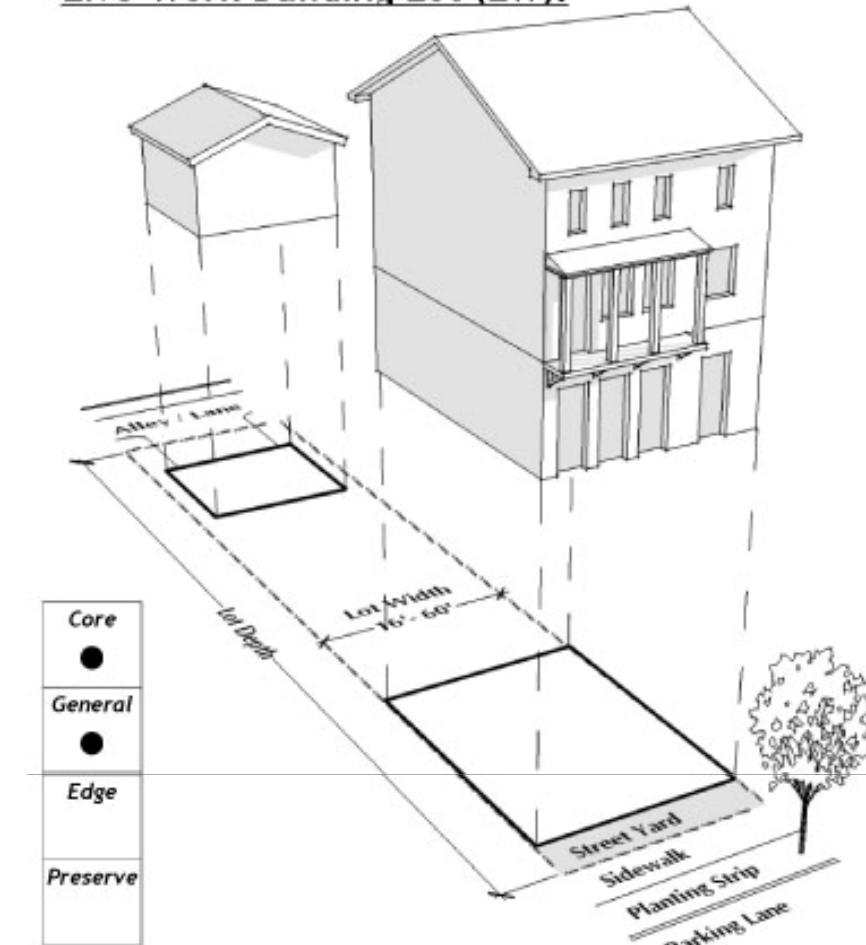
Apartment Building Lot (AB):



Character Examples:



Live-Work Building Lot (LW):



Character Examples:



Source: Sarasota County FBC, FL, for Mixed-use Infill Development, by Kohl & Partners and Spikowski Planning Assoc.

DEVELOPMENT EXAMPLES USING FBC



Source: <http://www.formbasedcodes.org>

DEVELOPMENT EXAMPLES



Source: <http://www.formbasedcodes.org>

DEVELOPMENT EXAMPLES



Source: <http://www.formbasedcodes.org>

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DEVELOPMENT EXAMPLES



Source: <http://www.formbasedcodes.org>

POTENTIALS FOR FORM-BASED CODES

Urban Code Catalog

Diagnostics and goals

Community Education

Zoning Law Evaluation

Evaluation of Development Options

POTENTIALS FOR FORM-BASED CODES

Urban Code Catalog

Creation of a repository of all prominent urban forms in a structured manner.

Re-evaluation of zone definitions.

Evaluation of urban qualities (architectural and functional)

Input for parametric urban model

POTENTIALS FOR FORM-BASED CODES

Diagnostics and goals

Creation of a rule base and parametric typology patterns from the FBC repository.

Rule-based 3D city model for evaluation.

Evaluation of urban potentials for passive design.

Report on potentials for investment strategies.

Identifying architectural development goals to overcome shortcomings.

POTENTIALS FOR FORM-BASED CODES

Community Education

Visualization of abstract building and zoning laws.

Creation of a visual language for changes in building and zoning laws as well as empowering architectural qualities per definition.

POTENTIALS FOR FORM-BASED CODES

Zoning Law Evaluation

Creation of digital urban models.

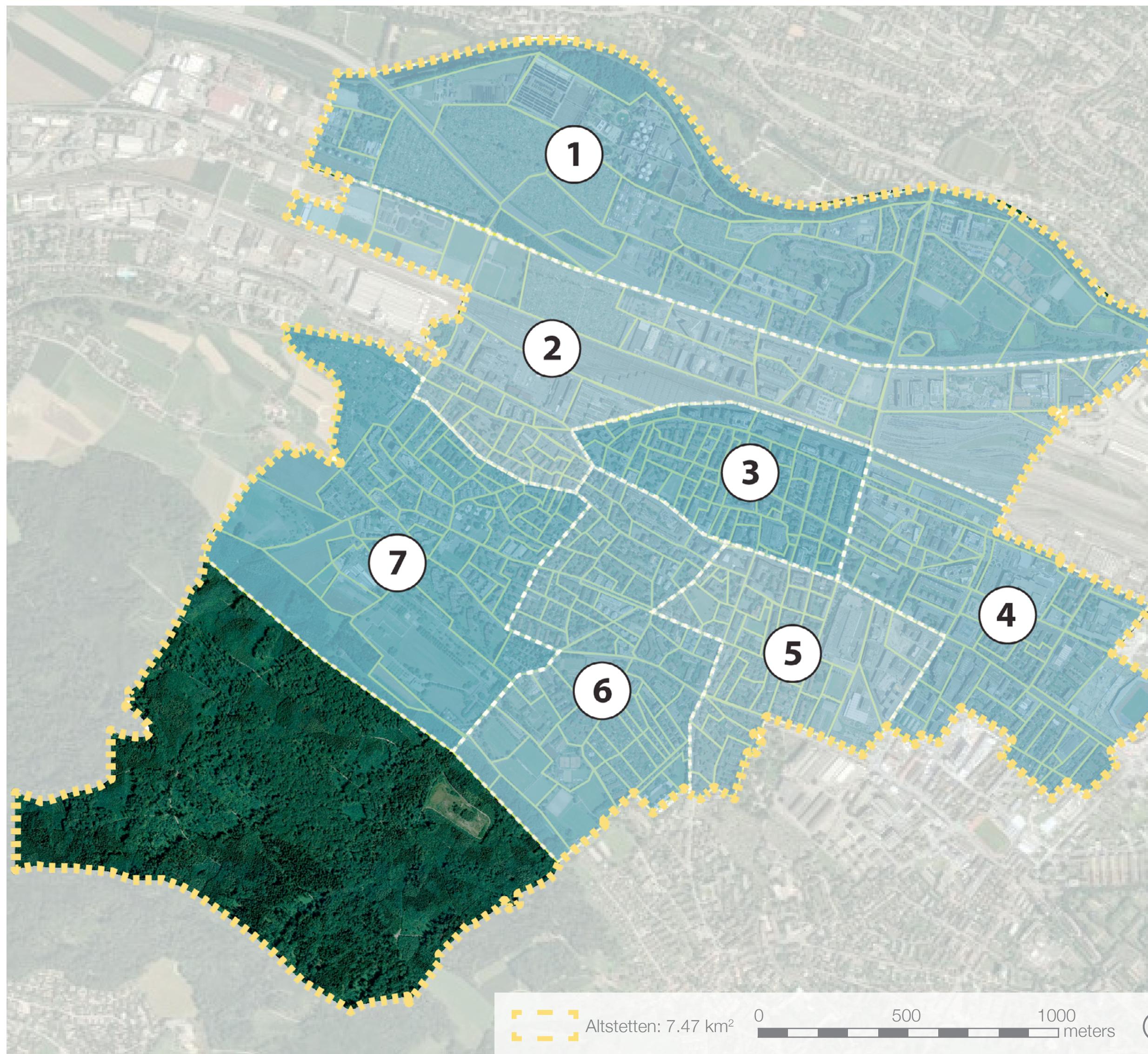
Evaluation of sustainability criteria for urban growths.

POTENTIALS FOR FORM-BASED CODES

Evaluation of Development Options

Design proposals and development proposals may be structured and may be better comparable.

CASE STUDY AREA ZH ALTSTETTEN



area 1



area 2



area 3



area 4



area 5



area 6



area 7



CASE STUDY AREA ZH ALTSTETTEN

area 1



area 2



CASE STUDY AREA ZH ALTSTETTEN

area 3



area 4



area 5



CASE STUDY AREA ZH ALTSTETTEN

area 6

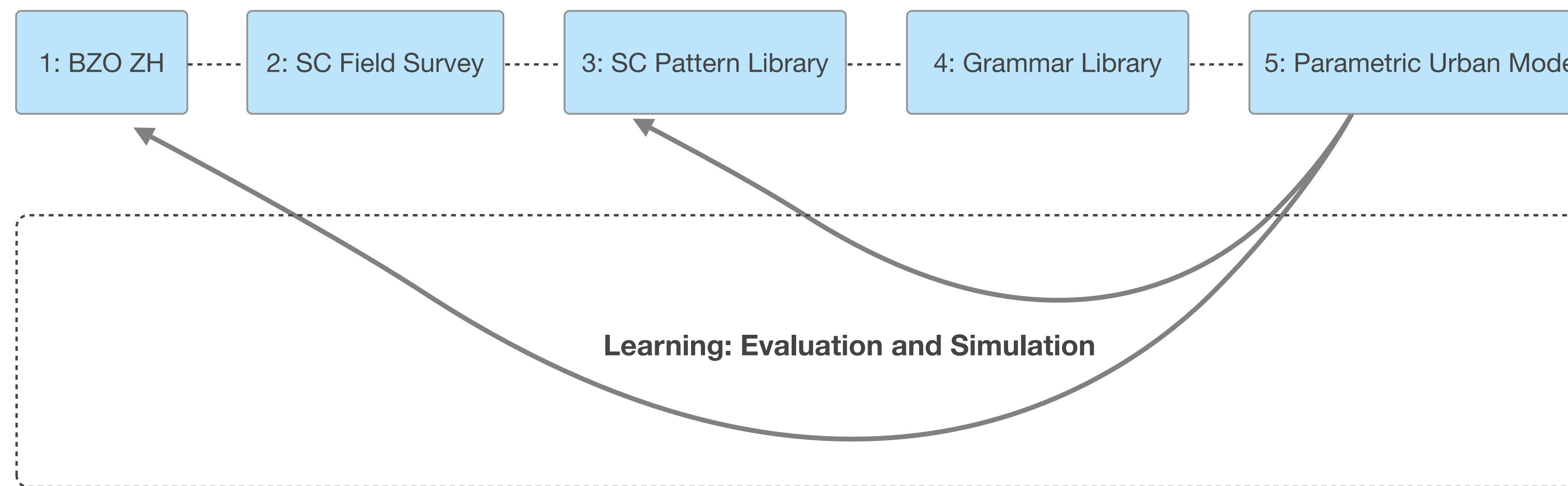


area 7



SMART CODE TO 3D

**Process for classification and
3D modell derivation and regulation
evaluation**





THANK YOU!

