AN INTRODUCTION TO
FORM-BASED DEVELOPMENT REGULATIONS

By Peter Katz[1]

The following paper was written as an introduction to the symposium *Shaping the American City: New Approaches to Development Regulation* (January 16-17, 2003, Chicago, Illinois), co-sponsored by the Brookings Institution and the American Planning Association. This paper will be expanded after the symposium to include a more comprehensive discussion of the problems related to existing development regulations, along with an exploration of other emerging regulatory approaches. In addition, the expanded paper will look at the pros-and-cons of new approaches and discuss the way such regulations could be adapted to work within the present use-based regulatory framework.

D R A F T

Problems of Use-Based Regulatory Approaches

One major barrier to the development and revitalization of America's cities is the body of planning regulations now in use by local governments. Central to these regulations is the practice of zoning, which, while an effective response to past problems of industrialization within cities, now acts to promote suburban sprawl. It does so because of its emphasis on the separation of land uses and its attempt to control growth by limiting density. Unfortunately these strategies spread development over ever-larger areas of land. It is now well known that such dispersed development patterns lead to a host of problems including increased automobile dependence, traffic congestion and regional jobs/housing imbalances.

While unchecked sprawl and abandonment of older urban areas is increasingly affecting many metropolitan areas, other cities and in-town neighborhoods are enjoying a renaissance. Unfortunately, the popularity of some of these newly revitalizing areas is threatening the very quality of the urban fabric that may have attracted redevelopment in the first place. Again, zoning is the culprit.

The rules that control redevelopment in many such places are based, not on the urban design principles that originally shaped them, but rather on suburban development regulations of the past 70 years. Often well-intended setback and FAR (floor area ratio) rules mean that new construction *cannot* maintain consistency with older historic structures. Excessive parking requirements frequently create large surface lots or bulky podiums that front once-lively streets, eroding the livability of otherwise coherent neighborhood centers.

Throughout the United States there is a sense that current planning and zoning regulations are not able to achieve the results that community leaders, planning experts and citizens most want. This gap is becoming more apparent as stakeholders attempt to implement more sustainable development approaches such as new urbanism and Smart Growth. Unfortunately, regulatory difficulties related to the practice of zoning causes many communities to abandon such alternative approaches in favor of more conventional single-use development.

Many developers and builders too, tired of the hefty impact fees and mitigation requirements they face in new growth areas, are starting to work in more established urban areas. Once there, however, many find that gaining development approval for mixed-use projects can take years of uncertain negotiations, raising their implementation costs without adding any real value to the end buyer or renter.

Often, the sheer incomprehensibility of outdated documents creates the greatest barrier to efficient administration of the regulatory process. Zoning regulations written in the middle years of the last century have now been tweaked and patched to the point where they are fully understood by only a few and are unworkable by almost everyone. Yet the problems continue to multiply.

Some New Urbanist planners are updating historic (pre-1930s) regulatory practices for use in shaping new neighborhoods and infill developments. Such tools not only help designers to more closely emulate the urbanism of older, well-loved places, they're also more supportive of the participatory planning processes that many communities are now seeking. The New Urbanism's more physically-based codes seem to work with such processes because their easy-to-understand diagrams are more understandable to stakeholders than the convoluted legal prose of most conventional zoning ordinances. Furthermore, some of these newly revived regulatory approaches are being married to computer technology to create a new generation of form-based development regulations that may prove easier and more effective to administer than existing use-based approaches.

New Urbanism and its Relationship to New Regulatory Approaches

In the late 1980s and early 1990s, a new approach to development began to emerge in the United States, Canada and Australia. Initially dubbed "neo-traditional planning," the movement has come to be known as New Urbanism, a subset of Smart Growth, a more general term embraced by groups ranging from the U.S. Environmental Protection Agency to the National Association of Home Builders. Based on the walkable neighborhoods, villages, and small towns built prior to World War II, the New Urbanism reintegrates the components of modern life – housing, workplace, shopping, and recreation – into compact, pedestrian-friendly, mixed-use neighborhoods set in a larger metropolitan framework providing open space and transit. The New Urbanism is seen by many as an alternative to suburban sprawl, a form of low-density development that consists of large, single-use "pods " – office parks, housing subdivisions, apartment complexes, shopping centers – all of which must be reached by private automobile.

The New Urbanism is best known for projects built in new growth areas such as Seaside (Walton County, Florida, 1981; Duany Plater-Zyberk & Company, Town Planners), Kentlands (Gaithersburg, Maryland, 1989; Duany Plater-Zyberk & Company, Town Planners) and Celebration (Osceola County, Florida, 1995; Cooper, Robertson & Partners and Robert A.M. Stern & Partners, Town Planners). The principles that define New Urbanism can also be applied to infill sites within existing urbanized areas. The leading proponents of New Urbanism believe that such infill development should take priority over new development. However, many social, political, and economic realities in North America currently favor development at the metropolitan edge.

The New Urbanism is characterized by a set of interrelated planning goals:

- All development should be in the form of walkable neighborhoods or districts, which have clearly defined centers and edges. At a minimum, the center includes a public space such as a square, a green, or an important street intersection. The center may also include public buildings such as a library, church, or community center as well as a transit stop and retail businesses.

- Neighborhoods and districts should be compact, measuring no more than one-quarter mile from center to edge and detailed to encourage pedestrian activity without excluding the automobile altogether. Streets should be laid out as an interconnected network that, in turn, creates perimeter blocks. Such blocks should be comprised of buildings with clearly defined public fronts and private backs, sides and/or interior courtyards. Building entrances should front streets rather than parking lots. The previously mentioned street network should follow a grid or modified grid pattern. While streets in such a network need not be straight, it is important that they provide alternative routes to a range of destinations within and outside the community. Cul-de-sacs, popular in suburban areas because they limit through traffic, are avoided in New Urban plans because they force a greater proportion of traffic onto a reduced number large arterials. Just as the New Urban neighborhood or district should be fully accessible to pedestrians, so too should the entire

metropolis. To this end, public transit should connect neighborhoods to each other and to the surrounding region.

- Within a neighborhood, a diverse mix of activities and land uses (residences, shops, schools, workplaces and parks, etc.) should occur in proximity. Also, a wide spectrum of housing options should be available to allow people of a broad range of ages and incomes to live within a single neighborhood or district. Rental outbuildings attached to larger individually owned residences and units over shops can contribute to the supply of affordable housing in a community, obviating the need for large-scale apartment blocks. Developments featuring a single use or serving one market segment should be avoided.

- Districts follow many of the same characteristics of a neighborhood, but lack the neighborhood's diverse mix of uses. Medical districts, for example, may have a disproportionate aggregation of hospitals, medical office buildings and related facilities. College campuses, and the areas that surround them, also function as districts, as do airports and manufacturing zones. Despite the challenges of accommodating large and sometimes awkward physical elements, districts can, and frequently do, achieve a high level of urban vitality.

- Last, but by no means least important, New Urban planning gives priority to the public realm. This includes public buildings, streets and open spaces. Civic buildings, such as town halls, churches, and libraries, should be sited in prominent locations and designed as "special" buildings. Public open space such as squares, greens, playgrounds and natural corridors should be provided in convenient locations throughout a neighborhood. (Because of the size of their playing fields and the need to serve multiple neighborhoods, schools are sometimes sited in greenbelts between neighborhoods.)

Critics of New Urbanism often mistakenly believe it to be a nostalgic planning approach that is mainly focused on historic building styles. While the appearance of some New Urban communities supports this perception, it is the underlying urban form of such communities – including their mix of uses, street network and block structure – that comprises the key distinction between New Urbanism and conventional suburban planning.

Seeking to build true neighborhoods within a predominantly suburban regulatory framework, the planners of the first New Urban communities realized that a different kind of "zoning" would be needed to shape a new generation of planned communities. Andres Duany, a co-founder of the Congress for the New Urbanism and frequent lecturer on the subject, would often exhort municipalities to "just throw away your existing zoning ordinances." Although this recommendation was seen as extreme, a number of communities took Duany's advice to heart. But rather than throwing out their existing regulatory documents, they drafted narrowly focused ordinances that would allow the firm's form-based codes to apply within specially designated development areas.

Since the early years of the New Urbanism movement, Duany and a number of like-minded colleagues have developed and revived[2] a range of regulatory strategies that both supplement and replace existing development regulation at the neighborhood scale. While the refinement and adoption of these approaches is still in an embryonic stage relative to the large "installed base" of conventional development regulations, early results show such approaches offering great promise.

Principles of Form-Based Development Regulations

Several guiding principles differentiate the regulatory approaches introduced in this paper from conventional development regulation:

Private Buildings Shape the Public Realm

As was stated earlier, New Urban planning gives priority to the public realm – including public buildings, streets and open spaces. Private buildings, despite their secondary ranking in the hierarchy, assume a significant role: They enhance and give definition to those same public buildings, streets and open spaces.

Because they are meant to stand out, public buildings are subject to fewer code requirements than private buildings, and are sited at locations of special significance. Washington DC's Capitol building, which terminates the view down Pennsylvania Avenue, is a well-known example of this approach. Private buildings behave differently. They combine with each other to form the "background fabric" of the community. Development regulations for private buildings attempt to balance the expression of the individual building with the overall composition of the larger block and streetscape. Again, the overriding goal is the enhancement and definition of the public realm.

All too often, the public realm that exists in new suburbs or older inner-city areas is badly degraded. It consists of "left-over" parcels not suitable for development, due to problems of size, slope or access. Such residual land rarely occupies a central location within the community. More often it is at the edges of a development, screening the community's highest value home-sites from the noise, congestion and visual clutter of nearby roads. Developers in many

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[2] Although the approaches presented in this paper are "new" relative to today's use-based regulatory regimes, they are actually quite similar to some regulations used in the United States, England and Europe in the early part of the Twentieth Century. The widely admired "streetcar" and early "automobile" suburbs of many American cities were largely implemented with such regulations. The continuing appeal of communities such as Roland Park in Baltimore, Coral Gables in Miami/Dade County, Oak Park in the Chicago metro area, Mariemont near Cincinnati, Forest Hills Gardens in Queens, (New York) and Shaker Heights outside Cleveland lend support to the thesis that good planning, and effective development regulations, contribute to the creation of long-term real-estate value. Indeed, properties in several of these communities rank near the top of their respective metropolitan regions in terms of housing prices. But despite their status as "better neighborhoods," each offers a diverse range of housing options, some quite affordable. Three of the communities, Forest Hills Gardens, Oak Park and Shaker Heights, feature exemplary regional transit access.

municipalities are required only to meet a quantitative requirement for public open space (for example: X square feet of open space per housing unit). It is not surprising that such an approach yields a public realm of only marginal quality.

This comparison of two places shows how the spatial configuration of a public park can affect the quality of civic life in a community:

- An urban square in an older neighborhood, surrounded by a consistent "street wall" of 4 and 5 story buildings, looks and feels like a "public room." Because of its distinctive physical form and central location in the neighborhood, the square becomes a favored site for festivals and public events. In so doing, it acts as a focal point for the community.

- By contrast, the same size open space in a new suburban subdivision, located between irregularly shaped parking lots and buildings of various heights that are situated at odd angles to busy nearby streets, lacks definition as a true public park and will likely remain underused.

In their quest to achieve a high quality public realm, New Urbanist planners seek an appropriate relationship between public and private interests. They know that well-configured public streets, parks, buildings and open spaces enhance the value of private property within master-planned communities[3]. Indeed, this strategy lies at the heart of the business model for New Urbanist development.

Existing neighborhoods and districts, too, enjoy the benefits of an enhanced public realm. In such places, however, there are severe constraints on the rules planners and local government can impose to achieve such an end. The new kinds of development regulations described in this paper may better address the needs of existing communities than conventional use-based regulations because of the way they manage the interface between public and private concerns.

Development Regulations Codify a Physical Plan; They Do Not Exist in the Abstract
The idea that one can "rewrite" one's development regulations without considering the underlying plan shaped by the regulations is absurd. Yet many local governments merely tinker with their regulations in the absence of planning, fearing that opening the door to the planning process will unleash a cascade of issues and decisions that they are not prepared to deal when they're taking on a what most see as a "housekeeping" project.

For many years, a schism has existed between the physical side of planning – which is communicated visually through the use of drawings, diagrams and photographs – and the legal side – which is most often expressed through arcane regulatory language, complex mathematical formulas and highly abstract maps. While the former is clearly more accessible to citizens, and

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[3] A 1999 study sponsored by the Urban Land Institute and the Congress for the New Urbanism found that "consumers paid more to live in New Urbanist communities" and that the price premium could only be attributed to the unique planning features of such communities. The study cited "pedestrian-oriented design with an emphasis on quality civic spaces" as one of five defining features of the New Urbanism.

therefore useful in the conceptual stages of plan development, conventional wisdom supports the view that the latter is a necessary "filter" for converting a community's will into law. This belief is driven by the notion that the legal filter achieves a level of precision not possible with visual media such as drawings or diagrams.

New Urbanists challenge this approach, asserting that the opposite is true. Indeed, they worry that a physical plan seen through the legal "filter" simply becomes too intangible for most citizens to comprehend. Without first establishing a clear vision of a physical place, they fear that such processes may lead to outcomes that are inconsistent with the stated planning goals of a community.

The adage of "a picture being worth a thousand words" lies at the heart of the New Urbanist's preference for more physically based, visually expressed regulatory approaches. While they don't diminish the need for solid, clearly structured written materials, they believe that effective visuals are key to galvanizing consensus around a development plan or proposal. Such visuals are understandable to a wider cross section of stakeholders and community members, thus fostering a more democratic form of development.

The proponents of the regulatory approaches described in this paper also believe that, when regulatory changes are considered, the physical consequences of such changes should be clearly communicated in visual form for the benefit of the public. In the current use-based regulatory system, this is often poorly done, if done at all. The problem stems from these reasons that are intrinsic to the system:

- Since conventional regulations exist primarily in text form, professional planners or designers would need to research existing and proposed ordinances, and then create visual materials from scratch to communicate the impact of proposed changes. This can entail considerable expense, which would ultimately be borne by the municipality.

- In addition, because the regulations *are* use-based, rather than form-based, the physical consequences of a given ordinance change cannot always be discerned, much less communicated. With density bonuses granted for architectural merit and/or for preferred uses (such as affordable housing or targeted business uses), and building sizes and parking requirements calculated differently for different uses, the variety of possible physical permutations related to a given ordinance change becomes nearly limitless. No planning department – even those with considerable resources – could afford to take on such a task in a truly comprehensive manner.

- Finally, the problems are compounded over time when the community's development ordinance and the plan it implements are "separated at birth," as they are under the current system. Absent an attempt to rejoin them with the admittedly challenging steps outlined above, there is little hope for future improvement. With each revision, the community's development ordinance grows increasingly complex, abstract, and detached from the place it regulates.

The new regulatory approaches described in this paper, on the other hand, are structured in a way that closely links regulations to the plan that they control. They are effectively "joined at the hip." As a result, the impact of proposed changes can be easily and clearly communicated to, and assessed by, those who have a stake in the future of the community.

Development Regulations Shouldn't Attempt to Control Everything, Just What's Important
Because they seek to codify a defined physical plan, New Urbanist development regulations are frequently stated in *pre*scriptive terms – indicating what *is* desired. Most conventional development regulations, on the other hand, are written *pro*scriptively – indicating what is *not* allowed.

Many assume, erroneously, that the New Urbanism's prescriptive approach automatically implies a greater level of design control that, in turn, suggests an increased need for discretionary design review. This criticism may, indeed, be valid for some New Urbanist development regulations, particularly those designed to work within a use-based regulatory context. However a new strain of "form-based" regulations use the prescriptive approach to reduce, and in some cases eliminate, the need for discretionary review.

The form-based approaches referenced here are able to achieve that result because, while they control *different* elements than conventional regulations, they actually control far *fewer* elements overall. Importantly, the elements controlled by such regulations are physical in nature – building type, for example – instead of density and land use. Such physical elements can be specified with precision, and compliance is easily verified. This is one reason why form-based regulatory documents are typically shorter and more concise than the conventional regulatory documents they seek to replace. Another reason for their brevity relates to the prescriptive approach itself: It is simply easier to state what one wants, than to try to list all of the possibilities that *could* lead to a negative outcome.

Form-based Codes: An Overview

As its name implies, form-based coding is founded on the idea that a community's physical "form" is its most intrinsic and enduring characteristic. The *form* referenced here includes not just buildings and blocks, but a constellation of physical elements that may include public spaces such as streets, squares, and greenbelts; civic infrastructure such as canals, bridges, and drainage systems; and natural features such as lakes, riparian corridors and beaches.

Form-based regulatory mechanisms are proposed in this paper as an alternative to the *Use*-based mechanisms that comprise the vast majority of regulatory regimes within the United States. The primary objective of such new approaches is the creation of better communities, which is achieved through the following strategies:

- The regulatory documents themselves are better able to define the physical form of a proposed plan; in so doing, matters of design move from a superficial role to a central one.

- The regulations are written with the aim of avoiding unintended negative consequences, and providing incentives for the creation of quality places that achieve optimum real-estate value.

- The documents are easier to understand and use by non-professionals because they are typically shorter than conventional zoning ordinances, written in plain language and graphically formatted.

The practice of form-based coding is currently employed by a small group of town planning firms[4] nearly all of which have some connection to the Miami-based firm of Duany Plater-Zyberk & Company (DPZ). DPZ first applied the technique in 1982 for its code for Seaside, the highly publicized coastal resort town on Florida's panhandle. Since that time, DPZ has formulated similar documents to guide the build-out of over 200 new and revitalized communities around the United States and throughout the world. While many of the practitioners of form-based coding work in Florida and the Southeastern US, others have spread the technique to more distant locales including the west coast of the United States, Europe and Australia.

Form-based Codes: The Components

Form-based codes typically[5] employ some or all of these documents: Regulating Plan, Building Envelope Standards, Definitions and Architectural Standards (optional). Some of these items resemble documents used in conventional zoning. For example, a **regulating plan (figure 1)** is analogous to a *zoning map*. Both documents show the places *where* certain rules apply. But there are critical differences between them.

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[4] Firms recognized for their mastery of form-based codes include Correa Valle Valle (Miami, FL); Dover Kohl & Partners (South Miami, FL); Duany Plater-Zyberk & Company (Miami, FL); Environmentally Sustainable Design (Melbourne, Australia); Geoffrey Ferrell Associates (Washington, DC); Lennertz & Coyle (Portland, OR); Moule & Polyzoides (Pasadena, CA); Opticos Design (Berkeley, CA).

[5] As mentioned in the text, form-based coding is a newly revived method of development regulation. The firms that have led its revival and ongoing development continue to experiment with a range of techniques. Because of the fluid nature of the current practice of form-based coding, the description presented here does not include some variations that are now in use. The description in this paper highlights the coding approach used by Geoffrey Ferrell Associates for the Pleasant Hill BART Station Property Code (a partial copy of which is included in the briefing binder that accompanies this paper). The code has been adopted by Contra Costa County to regulate the build-out of a 200 million dollar transit-oriented development designed by Lennertz & Coyle of Portland, Oregon. Several other code variants will be discussed in future chapters of this paper.
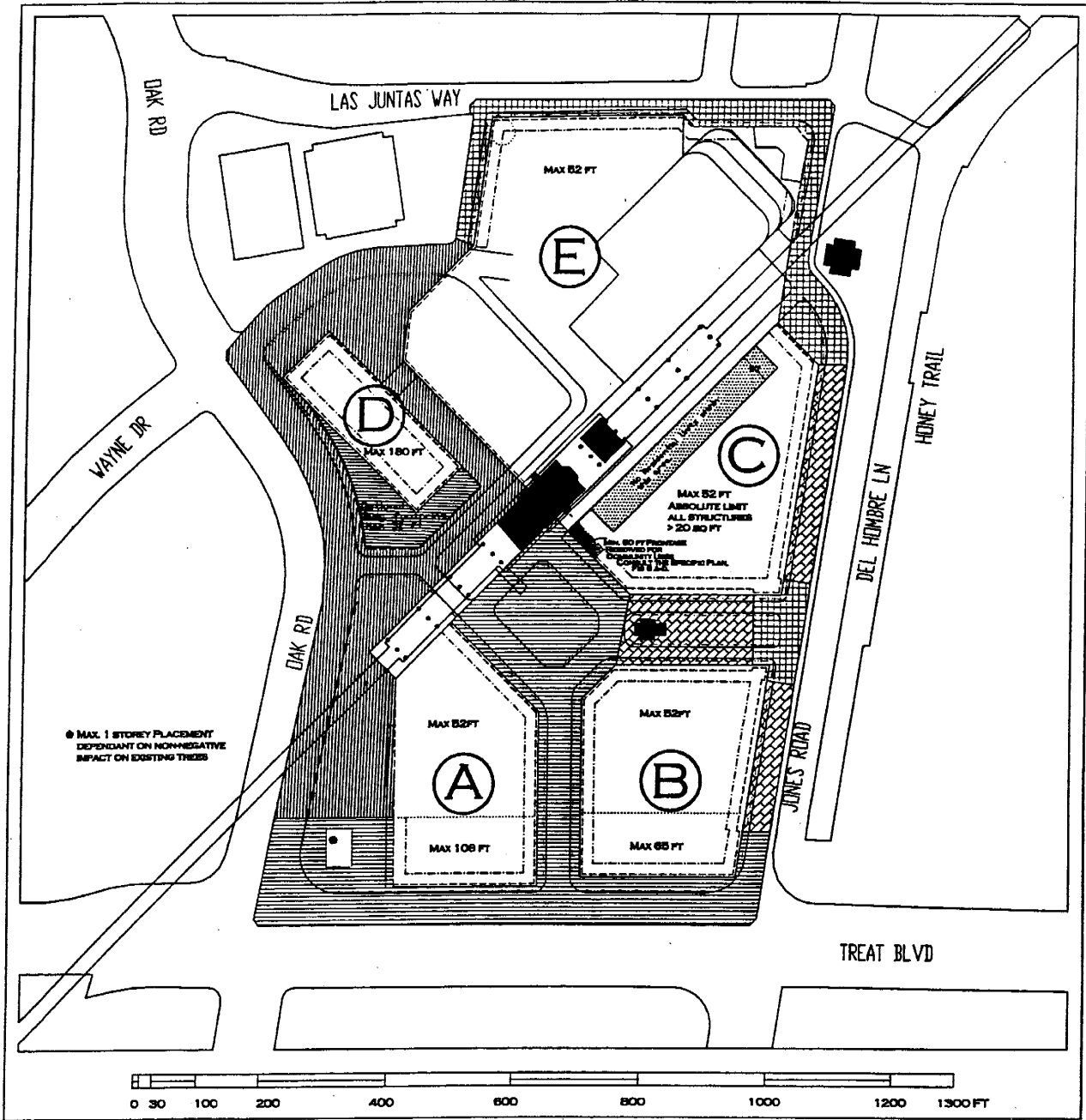
Figure 1; Regulating Plan (Pleasant Hill BART Station Property). Shading pattern within street indicates "building type" for fronting property. Key to shading patterns is missing from this view.

One important distinction between a regulating plan and a zoning map relates to the issue of *detail*. A zoning map may or may not show streets and blocks. Those that regulate existing urbanized areas typically do, since those physical features already exist. But zoning maps for new growth areas, where roads may be proposed but not yet built, often show just a few major highways and large arterials (typically those roads will be constructed by government). The

smaller roads would not appear on the zoning map because most such roads would normally be part of a future development plan for the site (and presumably constructed by a developer). Under this current system, drawing in the smaller roads would be seen as limiting the flexibility of the private developer.

A regulating plan, on the other hand, includes all proposed streets – large and small – and the blocks they define. True to its name, a *regulating* plan also includes other information used to *regulate* the build-out of the community. Such information includes include property lines that define each building lot, a "required building line[6]," a "street tree alignment line" and other building envelope and setback lines that the underlying plan may require. Regulating plans also indicate the location of public parks, squares and greenbelts and the rough footprints of planned public buildings. Consistent with the New Urbanism's emphasis on the public realm, such buildings are shown even though their planned construction may be years in the future.

The higher level of detail provided in a regulating plan, relative to a conventional zoning map, is important because it allows one to see and evaluate all the critical elements of a proposed plan in whole cloth. But beyond the matter of information, the increased level of detail relates to a second key distinction between the two documents: The regulating plan defines a plan that has been *designed*, while a zoning map serves only to indicate a range of potential land-use designations. In the former, decisions have been made about the size of a neighborhood, the character of streets, the heights of buildings, and the size and shape of public parks, among other things. The latter more often acts as a "place-holder" document for communities that do not yet possess a clear physical vision for their future.

A third critical distinction between regulating plans and zoning maps relates to *what* is being specified. Zoning maps sometimes use an alphanumeric designation to denote a specific *zoning category* – R-40, for example – for every parcel on the map. That designation sometimes refers to a specific use, or range of uses, and maximum density. In the previously mentioned *R-40* example, *R* stands for *residential*, and *40* signifies an upper limit of 40 units per acre.[7] To learn more about the detailed characteristics of a given zoning category, a user of the zoning map would refer to a zoning text that describes the category in terms of by-right and special uses, minimum lot size, setbacks, lot coverage, maximum buildable floor area per acre of land, parking requirements, landscaping requirements, and so on. Such descriptions can range from just a few pages to several hundred.

A regulating plan, on the other hand, specifies the *type(s)* of building that can be constructed on a given site within the community. A regulating plan for a typical New Urban community assigns

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[6] It is important to note the distinction between the required building line (RBL) and a setback line. The RBL typically controls the relationship between building fronts and the street, helping to maintain a street wall that is consistent with intentions of the urban plan. A setback line, often used to control the back and/or sides of a building, specifies only that a building be located within a certain boundary line.

[7] Often numbers in such designations may relate to arbitrary factors other than density. For example, an R-6 designation may simply be the sixth residential category to be defined in that community.

between 3 and 10 building types to a land area that may contain as few as twenty, or upwards of one thousand building sites.

Examples of building type designations include stacked flats, courtyard building, shop-house, live-work, townhouse, and detached villa, high-rise tower, among others. It should be noted that among practitioners of form-based coding, there is currently little standardization of building type designations. Indeed, much confusion and inconsistency exists in this area.[8]

Although some designations such as "high-rise tower" relate purely to matters of building form, others such as "townhouse" suggest particular uses[9] (residential, in this instance). Although certain building types *are* more conducive to certain uses than to others, the practice of form-based coding treats the assignment of use and building type as entirely separate matters. Each is specified at different levels of the information hierarchy (building type at the primary level, use at a secondary level).

The form-based code's primary sorting by building type is important because most of the code's rules are specific to just one particular building type, or maybe two or three. Rarely, if ever, would a set of rules apply to all the building types in a neighborhood. For example, a townhouse may be set back several feet from the sidewalk and lift its main floor above grade for interior privacy, while a shop-house in the same neighborhood will sit at grade, flush to the sidewalk, for the convenience of retail patrons. Public buildings, as was mentioned in a previous chapter, are often not subject to the rules of the code. Instead they are designed as special "objects" and encouraged to stand out by virtue of their location within the plan and their unique architectural design.

The form-based code's building-type-specific approach recognizes that, when it comes to detailing of the urban environment, one size does not fit all. More than a matter of appearance or personal taste, the codes regulate issues of privacy, public use, and access that are critical to the proper functioning of civic space.

The physical characteristics of each building type are summarized in a document known as the **"Building Envelope Standards"** (figure 2) that consists of a series of building cross-section and plan diagrams with key dimensions and a short list of specifications. In some cases building envelope standards may be assembled into a matrix and formatted as a poster. In either configuration, certain information – typically height, siting, elements, and uses – is spelled out for each building type.

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[8] Duany Plater-Zyberk & Company attempted to remedy this problem with a document known as the Lexicon of the New Urbanism. While many draft versions of that document – some with varying definitions of the same term – are in circulation, it has not yet been formally published.
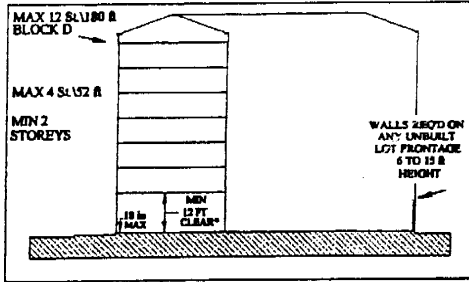
[9] While the townhouse building type may be associated primarily with residential uses, that type is also suitable for a range of commercial and even institutional uses. For example, it is not uncommon to see a townhouse accommodating an attorney's office, travel agency or a church annex.

Pleasant Hill BART Station
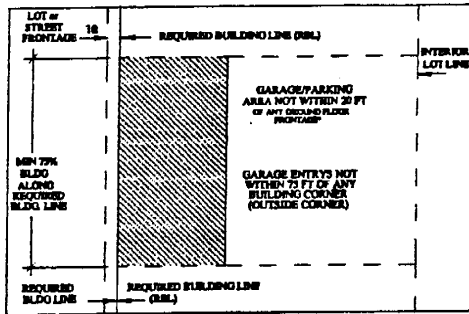## Building Envelope Standards
Workplace Building Sites

Height

MAX 12 St\180 ft BLOCK D

MAX 4 St\52 ft

MIN 2 STOREYS

WALLS REQ'D ON ANY UNBUILT LOT FRONTAGE 6 TO 15 ft HEIGHT

18 in MAX   MIN 12 FT CLEAR*

The building shall be between 2 and 4 Storeys in height, except where otherwise noted here or on the REGULATING PLAN.
Any parking structure w/in the block shall not exceed the eave height of any building w/in 75 feet.

Any unbuilt RBL or COMMON LOT LINE shall have a STREET WALL built along it between 6 feet and 15 feet in height.

The ground floor elevation shall be no more than 18 inches above the fronting sidewalk elevation.

No less than 80% of the ground floor shall have at least 12 feet clear height.

Siting

LOT or STREET FRONTAGE   18   REQUIRED BUILDING LINE (RBL)

INTERIOR LOT LINE

GARAGE/PARKING AREA NOT WITHIN 20 FT OF ANY GROUND FLOOR FRONTAGE

MIN 75% BLDG ALONG REQUIRED BLDG LINE

GARAGE ENTRYS NOT WITHIN 75 FT OF ANY BUILDING CORNER (OUTSIDE CORNER)

REQUIRED BLDG LINE   REQUIRED BUILDING LINE (RBL)

The STREET facade shall be Built-To the REQUIRED BUILDING LINE (RBL) within 75 feet of any BUILDING CORNER, and Built-To not less than 75% of the RBL overall. There are no required side setbacks.

Any unbuilt RBL shall have a STREET WALL along it, between 6 feet and 15 feet in height.

*Parking for vehicles (autos, trailers, boats, etc.) shall be at least 20 feet from any STREET FRONTAGE (except for basement garages). Garage/parking entrances shall be no closer than 75 feet from any BUILDING CORNER (except where otherwise designated on the REGULATING PLAN).

Elements

Awnings, Overhangs Encouraged

FACADE FENESTRATION MIN 30% MAX 70%
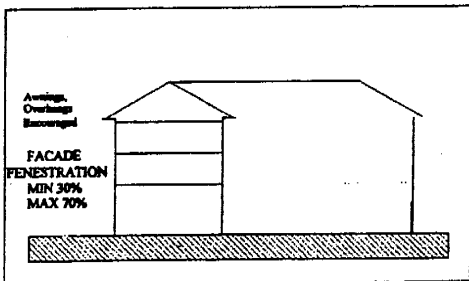
FENESTRATION shall be between 30 and 70% for all building facades (measured for each facade and storey between 3 and 9 feet above the finished floor). Blank lengths of wall greater than 20 linear feet are prohibited along any RBL.

Uses

OFFICE or RESIDENTIAL
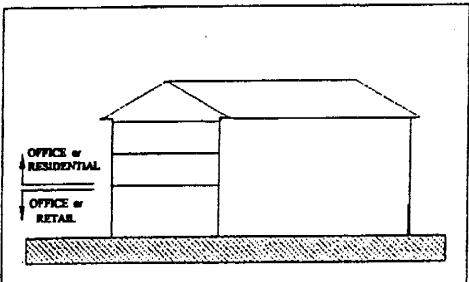
OFFICE or RETAIL

The ground floor shall be only non-residential uses such as Office and Retail.

Upper floor uses may be either office or residential (including lodging operations).

Functioning entry door(s) shall be along the RBL facade of the building facing Block E.

The garage, parking for vehicles (autos, trailers, boats, etc.) shall be at least 20 feet from any STREET FRONTAGE (except for basement garages). *Except where otherwise designated on the REGULATING.

November 2001

Figure 2; Building Envelope Standards, Workplace Building Sites (Pleasant Hill BART Station Property).

Height
The building's overall height is frequently stated as a maximum-height-to-the-eave dimension (for example, 52 feet), and as a range of stories (for example, from 2 to 4). The lower number in the range indicates the minimum number of floors required to "maintain the street wall." The maximum number of floors (or dimension-to-the-eave) usually represents the highest the building can be before it starts to overwhelm nearby streets and buildings. Obviously, the choice of such a range began with a judgment call on the part of the designer that was subject to review, discussion and modification by numerous parties before it was written into law.

It is important, at this point, to call attention to a subtle feature of form-based codes that helps them avoid some of the unintended negative consequences that exist in more conventional regulatory regimes. When building heights are specified with a single dimension, as they are in most use-based development regulations, developers tend to squeeze floor-to-ceiling-heights to the absolute minimum as a way to add more floors within a building. Form based codes prevent that problem by specifying height in two ways in the building envelope standards. In the example cited above, the 52-foot dimension-to-the-eave would be generous even for the maximum of four stories allowed for that building type. Thus, the structure of the regulating document helps to encourage the construction of quality buildings with ample floor to ceiling heights. As a further means of addressing this issue, some codes specify a minimum floor-to-ceiling distance for certain floors (usually the first).

Building envelope standards also include a minimum dimension for height (above grade) of the first floor of some building types as a way to achieve interior privacy. The height of garden walls and fences along the un-built portions of a building's property line are also specified, both for reasons of privacy and as way to maintain a proper urban street wall.

Siting
These rules control the placement of a structure in relation to fronting streets and adjacent building lots. Dimensions for front, side and rear build-to lines and/or setbacks, as well as the locations and configurations of building entrances, parking locations, yards and courtyards are specified.

Elements
These rules govern the major architectural elements of a building, such as windows, doors, roof dormers, porches, stoops, balconies and chimneys. Standards cover basic information such as quantity, configuration (including permitted encroachments) and size of elements. Window coverage, an important aspect of pedestrian-friendly streetscapes, is specified as a percentage of total façade area for street level and upper floors.

Uses
Finally, uses, far from being ignored in form-based codes, are clearly articulated. Permissible uses are spelled out in a brief text and summarized on a simple cross-section diagram of the building. The advantage of this diagrammatic approach is that different uses can be clearly labeled on the individual floors of a building (for example, retail and office on the ground floor; residential above).

Beyond its superiority as a graphic representation, this technique encourages the fine-grained mixing of uses within a single building. With use-based regulatory systems, by contrast, planners often resort to a range of graphic gymnastics – multi-color stripes, or patterns, for example – to satisfy the two-dimensional limitations of most zoning maps. Sometimes municipalities create entirely new land-use designations for the same purpose. While such techniques have certainly worked in the past, one can see how the very tools-of-the-trade militate against the broader implementation of mixed-use development within the planning profession.

A third component of form-based codes is its glossary of **definitions**. While the purpose of this component is obvious, the special need for such a glossary deserves mention.

By carefully referencing and then defining key physical elements of a plan and/or the buildings within that plan, the practitioners of New Urbanism hope to bring greater precision and clarity to the process of defining a community's built form. In some cases commonly understood words such as "alley" or "balcony" are defined in ways that may be specific to a given plan. For example, the balcony definition in the Pleasant Hill BART Station Property Code states, "balconies…must be roofed and enclosed by balustrades (railings) and posts that extend up to the roof…" That requirement for what some call a "post-up" balcony contributes to a building design that is consistent with the vernacular traditions of California, without actually mandating a particular architectural style. By avoiding any direct reference to building style, form-based codes enable planners to achieve a desired physical result without becoming entangled in subjective issues of aesthetics or personal taste.

Figure 3; Residential Buildings with "Post-Up" Balconies (Pleasant Hill BART Station Property).

Architectural Standards, a component of form-based codes do, in some cases, touch upon issues of style, but the adoption of such standards remains optional at the discretion of the community. In certain locations, such as master-planned developments or special retail districts, property owners may choose to bind themselves to such standards which mandate a higher level of architectural control than the base components of a form-based code (or zoning for that matter). Due to their unique legal status, historic district commissions are also able to impose a similar degree of architectural control over individual properties. The standards may include the regulation of roof materials and slopes, building materials and finishes, paint colors, window and door detailing and the placement of mechanical equipment.

Because they have little direct impact on matters of public health, safety or welfare, architectural standards are rarely administered by governmental bodies. More often they are enforced by a private homeowners organization. Indeed, these architectural standards function in the same manner as the covenants that home purchasers accept when buying into a conventional master-planned communities or subdivisions.

New Urbanists sometimes refer to architectural standards metaphorically as a "dress code" for the community. If the structure of a form-based code were applied to the human body, the analogy would play out like this: The code's core components, which determine building form and massing, would define a body that has two arms, two legs, a trunk, an abdomen, neck, head and other major parts. The head would include two eyes, two ears, one nose, one mouth, one chin, forehead, and so on. The architectural standards would go beyond those basics to determine whether one is wearing a bow tie, a conventional neck tie, or no tie at all. It might also specify the color of one's shirt and the pattern of the print. Obviously, there is no limit to the detail such a document could dictate.

Indeed, the practical limit of most regulatory mechanisms is the degree to which people are willing to accept group control over matters of private property. By making the adoption of such standards optional, a community can determine the level of control it wishes to assert in its quest to achieve a particular outcome.