Title
Building Community across the Rural-to-Urban Transect [The Transect]

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> *Eighty percent of everything ever built in America has been built in the last fifty years, and most of it is depressing, brutal, ugly, unhealthy and spiritually degrading.*
> *— James Howard Kunstler,*
> The Geography of Nowhere[1]

> *In 2030, about half of the buildings in which Americans live, work and shop will have been built after 2000. While these projections may seem overwhelming, they also demonstrate that nearly half of what will be the built environment in 2030 doesn't even exist yet, giving the current generation a vital opportunity to reshape future development.*
> *— Arthur C. Nelson,* Toward a New Metropolis: The Opportunity to Rebuild America[2]

The 80 percent of the American built environment described by Jim Kunstler as the "geography of nowhere" has appeared incrementally over the last half century under the influence of land use regulations and a web of codes, standards, and business practices that now represent a national system for the mass-production of sprawl. The placeless character of what passes for community building today is the product of an ad hoc framework that now governs making and remaking the physical form of neighborhoods, cities, rural areas—and entire regions.

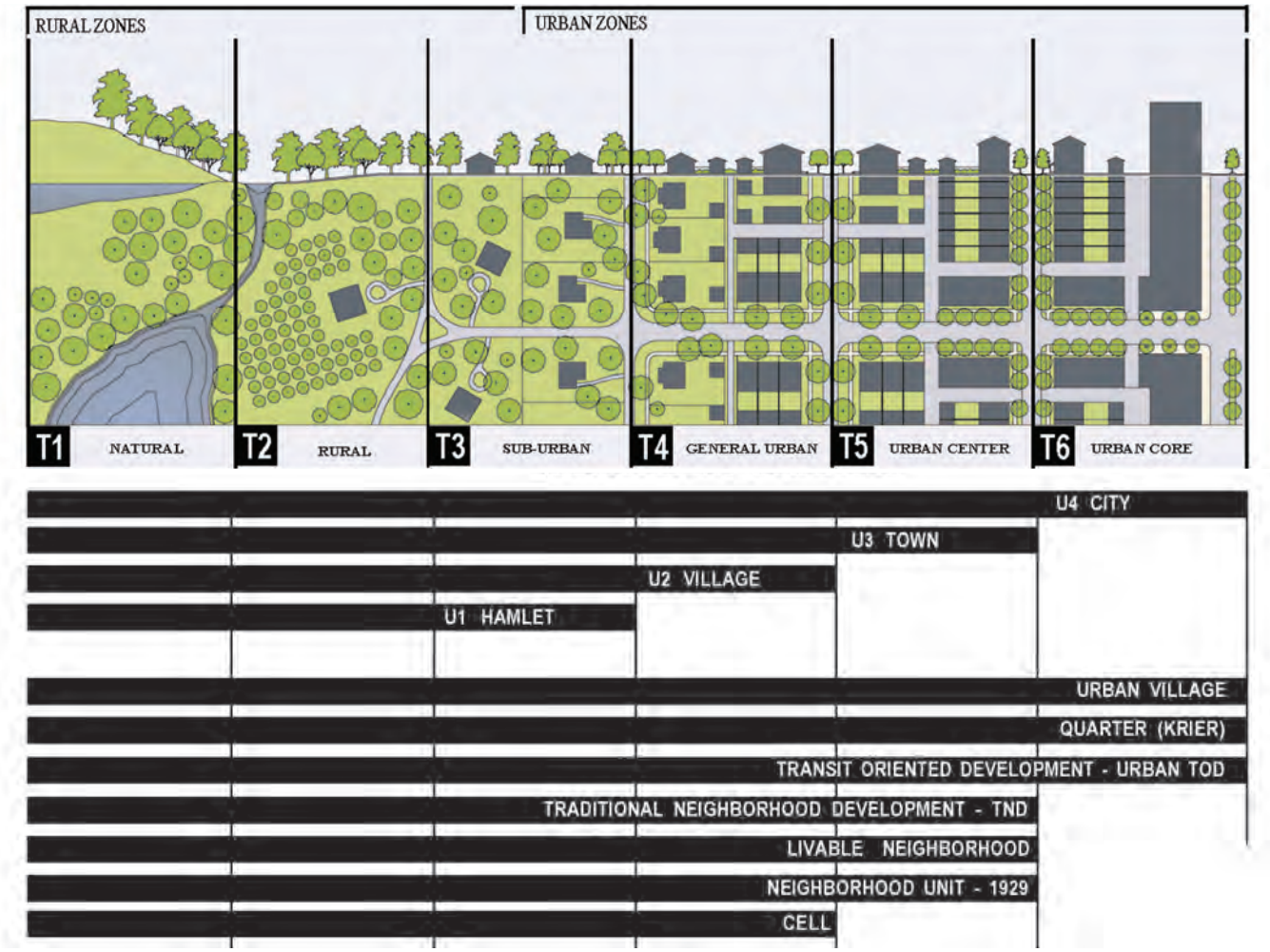
This "hidden" regulation of place has been the subject of increasing scrutiny. As Andrés Duany has observed, "what is assumed to be a neutral, market-responsive and technocratic system is actually heavily biased."[3] Empirical studies have now confirmed a regulatory bias favoring conventional suburban development at the expense of more varied local and urban forms.[4] Nevertheless, the power of sprawl as a business strategy and wealth generator has remained largely unchallenged. As a result, there is today a crucial need for a more explicit understanding of how hidden instruments such as engineering standards, building codes, zoning ordinances, lenders' guidelines, and other professional tools shape the possibilities for place making and community building long before any designer ever picks up a pencil.[5]

Above: Anywhere, U.S.A., a product of present land use regulations. Photo by Charles C. Bohl

Opposite: The rural-to-urban transect encompasses a full spectrum of environments. This diagram shows a gradation of natural and manmade elements within its six principal zones, in section and plan. The diagram also indicates how transect zones correlate with some of the nomenclature of traditional urbanism. They are not, however, adaptable to conventional single-use zoning. Drawing courtesy of Duany Plater-Zyberk & Company.

Among those studying American development trends, real estate analyst Christopher Leinberger has written that the development industry is now focused on building the same nineteen real estate product types in every community in America.[6] These generally represent single-use, stand-alone properties with floor-area ratios from 0.1 to 0.4 (i.e., where buildings cover only between 10-40 percent of a total site area, and the rest is devoted primarily to parking).[7] These standardized product types have been refined by the industry over many decades, making them relatively easy to finance, build, lease and sell. In recent years the growth of real estate investment trusts (REITs) have transformed these real estate properties into commodities that can be bundled and traded as investment portfolios.

Together with a lowering of interest rates, such commoditization has provided much of the basis for the present U.S. building boom. Clearly, these development products have been successful at meeting the functional needs of businesses and consumers, and such development now pervades the fabric of our metropolitan areas. Yet, the staunch opposition to growth in communities nationwide also reveals how satisfying basic functional needs is not enough. While the real estate industry has become very good at building these single-use, automobile-oriented projects, the projects themselves are not very good at building communities. Ad hoc aggregations of single-use projects have proven to be ill suited for creating communities that are socially diverse, environmentally sensitive, and economically sustainable. The result is a widespread dissatisfaction with growth and sprawl, and the clamoring for new

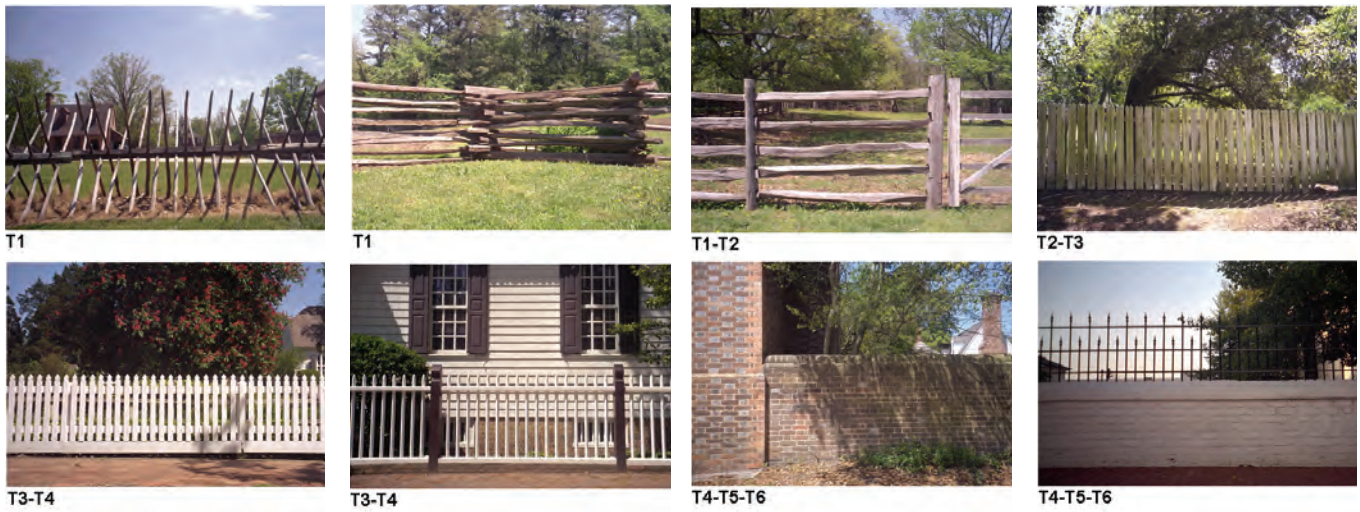


methods of building communities that are more distinct, memorable, livable and worth caring about.

Contemporary ways of envisioning, planning and building—based on land use zones, traffic flows, and the replication of real estate products—stand in stark contrast to earlier ways that Americans planned towns and cities. Here is Benton MacKaye, writing in the late 1960s, about the rationales that informed the community builders of his hometown of Shirley Center, Massachusetts, when it was founded in 1753:

> *The committee made its report and recommendations (their "town plan"). The cornerstone would be the Meetinghouse (the "sacred tree" that went with the moot-hill). On one side would be the Churchyard, dedicated to eternity. On the other side the Common, devoted to posterity. Around this would be "clustered," besides the homesteads and the Town Hall, the Meetinghouse, Schoolhouse and Country Store.* They would make the "five senses" that constitute a complete rural community: home, government, religion, education, and commerce *each represented by its appropriate structure.*[8]

The above passage shows how much knowledge about community building has been lost in recent times. The good news, however, is there will be a great opportunity in coming years to go beyond current hypercommercial practice to build healthier, more fulfilling environments. As the Brookings Institution study cited at the beginning of this article estimates, nearly *half* the built environment in the United States will be built or rebuilt over the next 25 years.[9] The question is, will the same system—the same types of codes, policies, business models, and practices—



continue to mass-produce sprawl using cookie-cutter forms? Or can the current and succeeding generations make the most of their "opportunity to rebuild America" to create a greater variety and quality of places to meet a greater variety of needs?

We believe the positive resolution of this question cannot be based simply on zoning reform within the current framework. In recent decades many attempts to fashion better regulatory tools—through planned-unit development, flexible zoning, performance zoning, overlay districts, design guidelines, and the like—have produced little or no gain. Today, communities with weak or non-existent zoning, such as Houston, simply offer different arrangements of the same sprawl-inducing types as more regulated communities. As long as the basis of regulation and development remains divorced from holistic concepts of environment and society, of the region and community character, the results will be the same.

This issue of *Places* concentrates on an alternate vision for organizing community building: the rural-to-urban transect. The articles focus on the transect as both a conceptual framework for describing and better understanding the qualities that help distinguish rural, suburban and urban places from one another, and as an alternative basis for determining the practical plans, rules and regulations that constitute the playing field for future place making and community building.

Above: The transect is a taxonomic engine that can place a range of artifacts in useful order at many levels of design. In this case, the declension of fences in Williamsburg, Virginia, support a clear transect from edge to center, from countryside to King Street. These familiar fence types, when placed in inappropriate transect zones, may be considered kitsch. Photos courtesy of Duany Plater-Zyberk & Company.

Opposite: The SmartCode is a model form-based code derived from the transect. It contains detailed recommendations for the design of buildings and public spaces. This page from the code provides model transect-related guidelines for the area between a building and the street. In practice, these would be modified to reflect local conditions. Courtesy of Duany Plater-Zyberk & Company.

A New Normative Theory

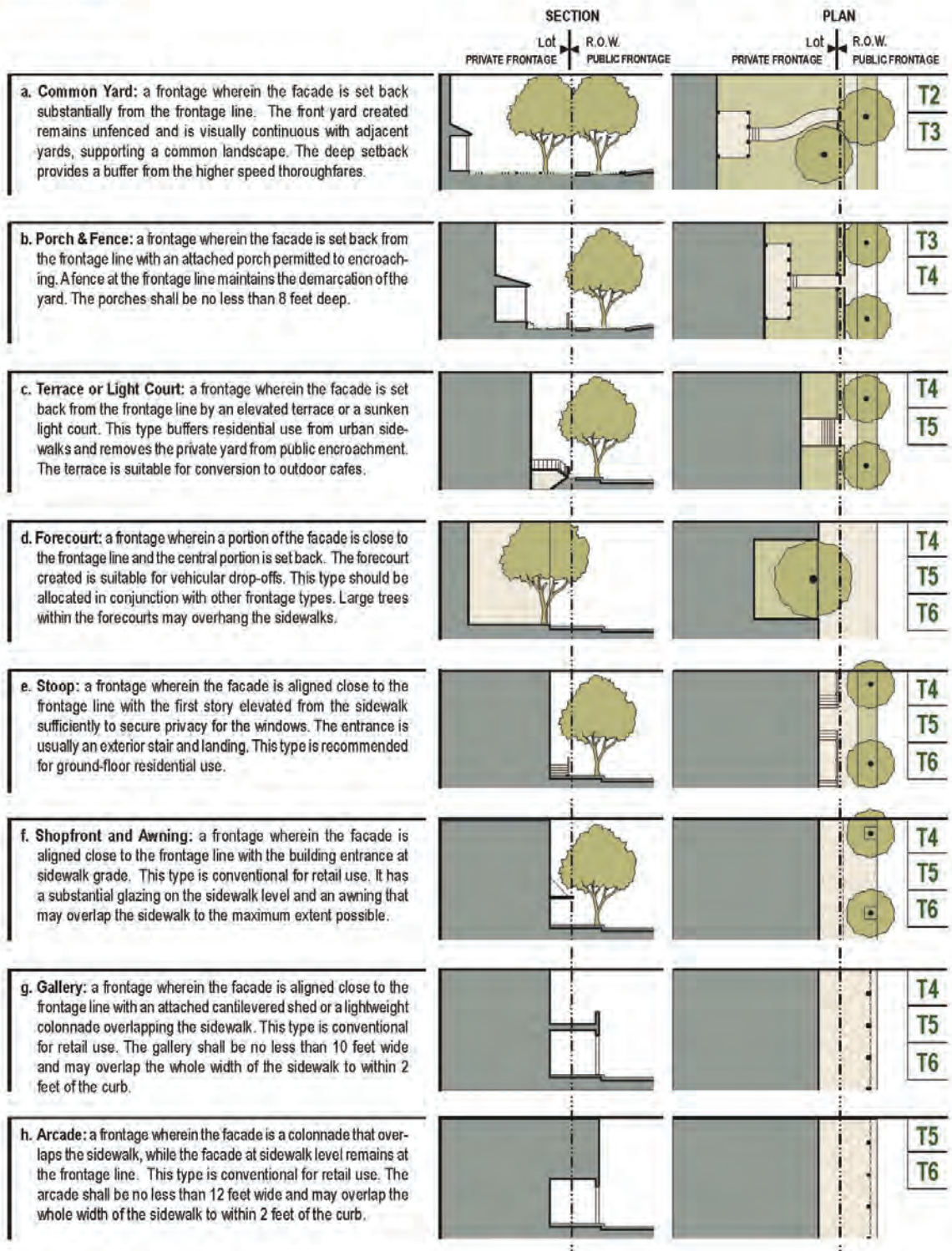
The contemporary American landscape has evolved from a tapestry of vast natural areas and agricultural lands dotted with small hamlets, villages, towns and cities into a world composed largely of segregated zones, into which are placed mass-produced real estate products linked by an expansive automobile-oriented infrastructure. As Dolores Hayden observed in *A Field Guide to Sprawl*, "Words such as city, suburb and countryside no longer capture the reality of real estate development in the United States."[10]

Through the years, there has been no shortage of theories, concepts and studies examining the American landscape for what it is. The literature ranges from the perceptive work of William Whyte, who first coined the term "sprawl" in the 1950s; to Robert Venturi and Denise Scott-Brown's embrace of the common commercial strip in *Learning from Las Vegas*; to J.B. Jackson's writings on "vernacular landscapes"; to all manner of research attempting to define the "costs of sprawl."[11] However, Kevin Lynch once referred to such work as "status quo" theory, because it merely described the world as it is (or was). By contrast, "normative" theories have the power to describe the world as it ought to be.[12]

What has been lacking is a more holistic, regional framework based on *character of place*. Such a new norma-

SMARTCODE
municipality

TABLE 7 PRIVATE FRONTAGES



a. **Common Yard:** a frontage wherein the facade is set back substantially from the frontage line. The front yard created remains unfenced and is visually continuous with adjacent yards, supporting a common landscape. The deep setback provides a buffer from the higher speed thoroughfares.	T2 T3
b. **Porch & Fence:** a frontage wherein the facade is set back from the frontage line with an attached porch permitted to encroaching. A fence at the frontage line maintains the demarcation of the yard. The porches shall be no less than 8 feet deep.	T3 T4
c. **Terrace or Light Court:** a frontage wherein the facade is set back from the frontage line by an elevated terrace or a sunken light court. This type buffers residential use from urban sidewalks and removes the private yard from public encroachment. The terrace is suitable for conversion to outdoor cafes.	T4 T5
d. **Forecourt:** a frontage wherein a portion of the facade is close to the frontage line and the central portion is set back. The forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other frontage types. Large trees within the forecourts may overhang the sidewalks.	T4 T5 T6
e. **Stoop:** a frontage wherein the facade is aligned close to the frontage line with the first story elevated from the sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor residential use.	T4 T5 T6
f. **Shopfront and Awning:** a frontage wherein the facade is aligned close to the frontage line with the building entrance at sidewalk grade. This type is conventional for retail use. It has a substantial glazing on the sidewalk level and an awning that may overlap the sidewalk to the maximum extent possible.	T4 T5 T6
g. **Gallery:** a frontage wherein the facade is aligned close to the frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the sidewalk. This type is conventional for retail use. The gallery shall be no less than 10 feet wide and may overlap the whole width of the sidewalk to within 2 feet of the curb.	T4 T5 T6
h. **Arcade:** a frontage wherein the facade is a colonnade that overlaps the sidewalk, while the facade at sidewalk level remains at the frontage line. This type is conventional for retail use. The arcade shall be no less than 12 feet wide and may overlap the whole width of the sidewalk to within 2 feet of the curb.	T5 T6

tive theory would transcend and guide more technocratically defined controls governing such concerns as land use zones, floor area ratios, open space standards, environmental regulations, and roadway carrying capacities. The problem hasn't simply been the lack of distinctive rural and urban (normative) models, but the relentless and often insidious grafting of suburban types—building-lot configurations, frontages, street types, landscaping, public works, bland open spaces—onto urban and rural settings. This has fueled the destruction of the city and the countryside as well as frustrated the construction of new urban places. A normative theory based on character of place could offer people a vision they can better understand and invest themselves emotionally in. The rural-to-urban transect proposes one such theory.

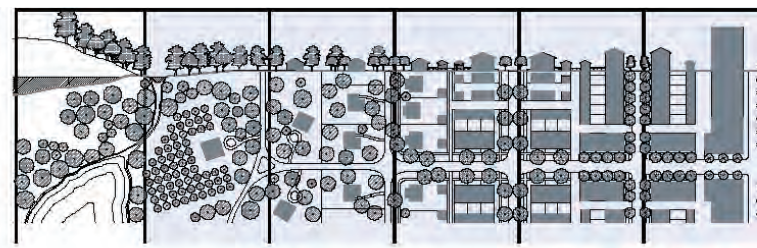
As the images accompanying this article show, a transect is a way of locating and understanding a variety of different types of human settlement within a comprehensive web of natural and human habitats. As a historical concept, its origins have been noted in work by Patrick Geddes, Ian McHarg, and Christopher Alexander.[13] And Douglas Duany, a landscape architect credited with introducing the idea to the New Urbanism movement, has traced the transect even further back to such eighteenth-century geographers and naturalists as Alexander von Humbolt. The *SmartCode Manual*, developed by Duany Plater-Zyberk and Company, describes the transect in these terms:

> *A transect, in its origins (Von Humboldt 1790), is a geographical cross-section of a region used to reveal a sequence of environments. Originally, it was used to analyze natural ecologies, showing varying characteristics through different zones such as shores, wetlands, plains, and uplands. For human environments, such a cross-section can be used to identify a set of habitats that vary by their level and intensity of urban character, a continuum that ranges from rural to urban. In Transect planning, this range of environments is the basis for organizing the components of urbanization: building, lot, land use, street, and all of the other physical elements of the human habitat.*[14]

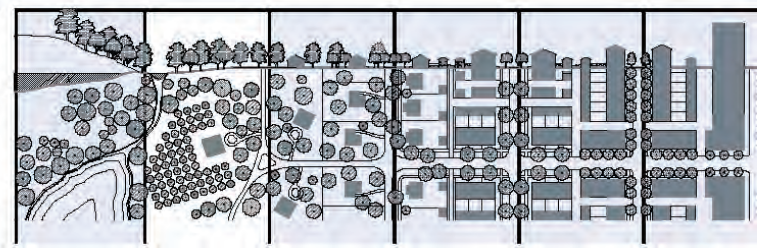
Right: Conditions typical of development over six transect zones. This succession of drawings may be understood as either a spatial (entering a city) or temporal (settlement maturation) progression. Drawing by Eusebio Azcue for Duany Plater-Zyberk & Company.

Opposite: Transect zone definitions. Drawing courtesy of Duany Plater-Zyberk & Company.

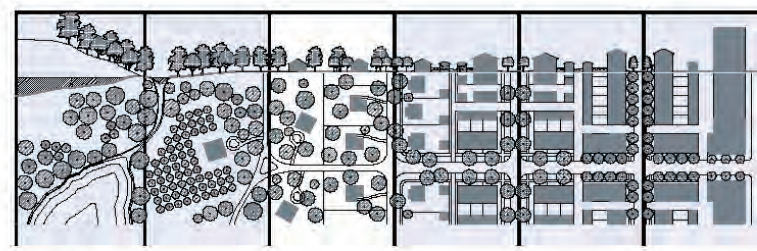
T1 THE NATURAL ZONE consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology or vegetation.



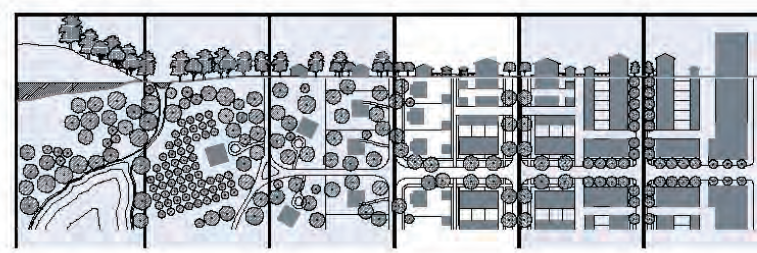
T2 THE RURAL ZONE consists of lands in open or cultivated state or sparsely settled. These include woodland, agricultural lands, grasslands and irrigable deserts.



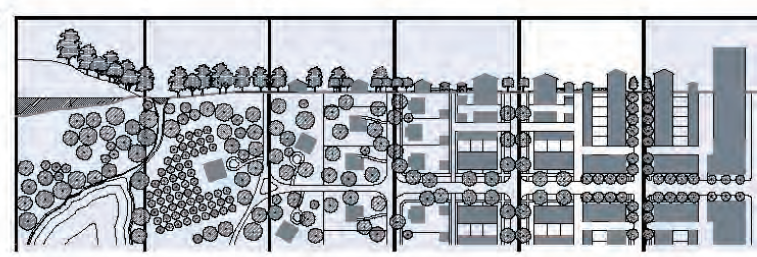
T3 THE SUB-URBAN ZONE, consists of low density suburban residential areas, differing by allowing home occupations. Planting is naturalistic with setbacks relatively deep. Blocks may be large and the roads irregular to accommodate natural conditions.



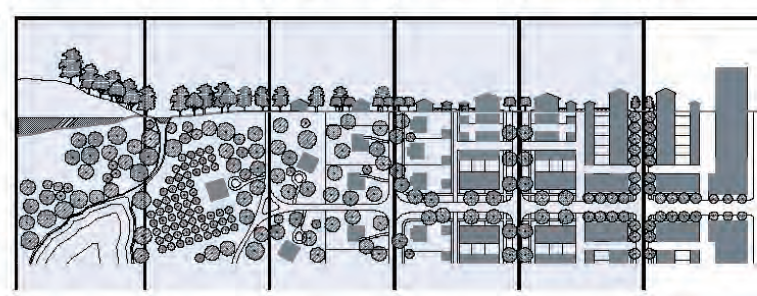
T4 THE GENERAL URBAN ZONE consists of a mixed-use but primarily residential urban fabric. It has a wide range of building types: single, sideyard, and rowhouses. Setbacks and landscaping are variable. Streets typically define medium-sized blocks.



T5 THE URBAN CENTER ZONE consists of higher density mixed-use building types that accommodate retail, offices, rowhouses and apartments. It has a tight network of streets, with wide sidewalks, steady street tree planting and buildings set close to the frontages.



T6 THE URBAN CORE ZONE consists of the highest density, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks; streets have steady street tree planting and buildings set close to the frontages.



The transect is important within the New Urbanism movement because it provides a regional framework for planning that encompasses a fuller spectrum of rural, suburban and urban environments. Although the Charter for the New Urbanism includes regional principles, the primary focus of New Urbanist practice has been at the scale of traditional neighborhood developments (TNDs) and transit-oriented developments (TODs). Early regional planning by New Urbanists was generally organized according to environmental and transportation systems that essentially allowed the mapping of locations for new urban nodes. The transect encompasses a more complete range of human settlement types, addressing relationships between urban, suburban and rural areas, and attempting to define the basic physical characteristics that differentiate them.

The transect reflects recognition that a sustainable future must embody an interrelated continuum of natural and human habitats—natural, rural, suburban and urban—with differing settlement densities and opportunities for social encounter and human activity. In particular, it attempts to distill general physical characteristics of urbanism that have existed for 5,000 years—the hamlet, village, urban neighborhood, town, and city—in relation to each other and the natural world.

It is important to distinguish the theory of the transect from its practical applications, some of which are highlighted in graphics accompanying this article and in the articles that follow. It should also be emphasized that the rural-to-urban transect presently embraced by New Urbanists in the United States represents a transect, not *the* transect.[15] Very different transects could be conceived for cultures and geographic regions where human settlement patterns, and local examples of what constitutes natural, rural, suburban and urban character, have evolved differently.

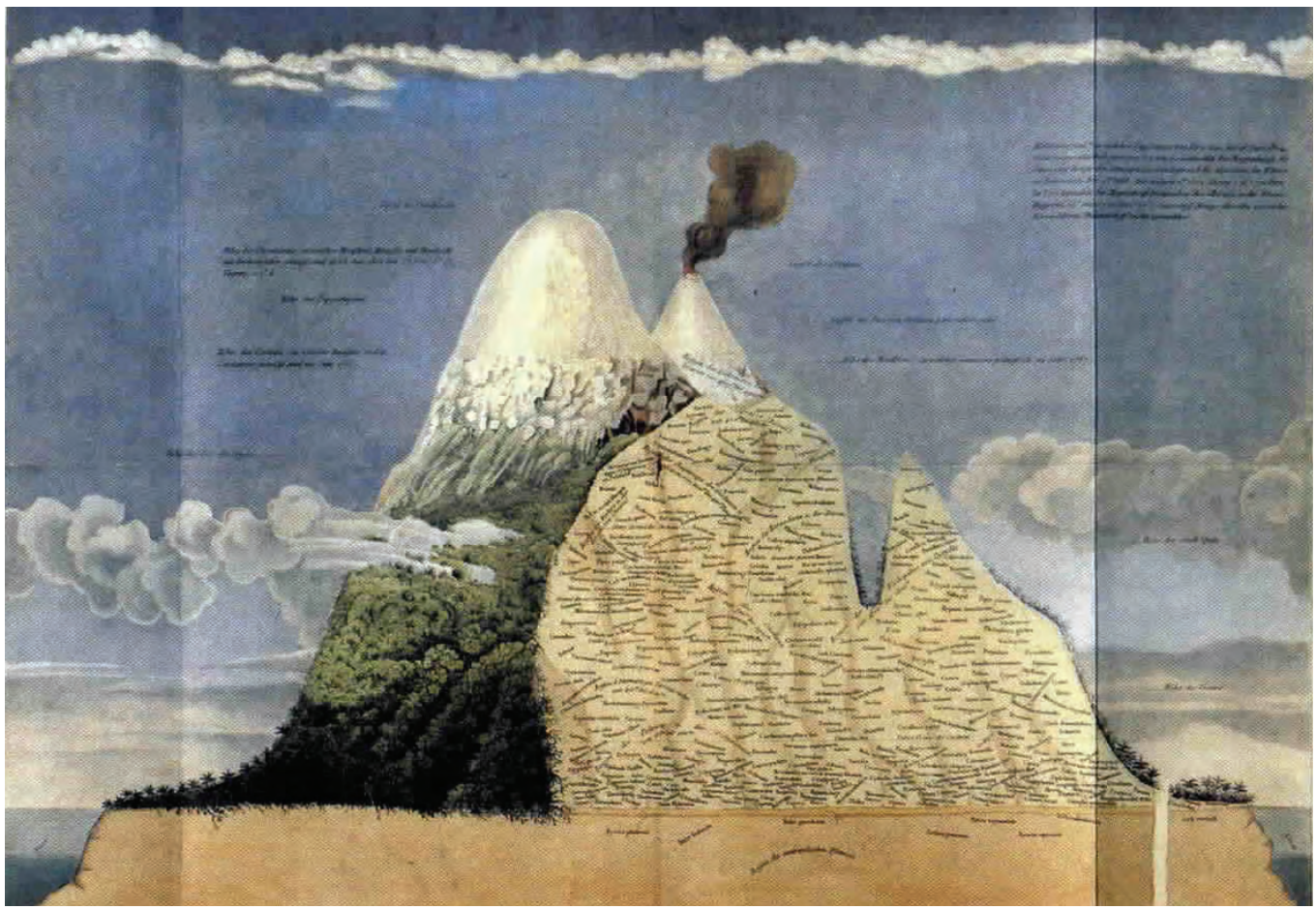
Within New Urbanism, the use and view of the transect continues to evolve—as does the degree to which individual New Urbanists incorporate it into their thought and work. The most detailed application of the transect within New Urbanism can be found in Duany Plater-Zyberk's SmartCode. This "form-based" model zoning code originated as a proprietary alternative to "use-based" zoning practice. It is now distributed as "freeware" via the Internet. Where the transect is an overall theory of human settlement, the SmartCode represents one application of it that is intended to guide the building of American cities and towns.

Apart from the SmartCode, a wide variety of planners, urban designers, transportation planners, and architects—including many who do not identify themselves as New Urbanists—now use the ideas of the transect on either an informal basis or as a formal framework to facilitate community planning, design regulating plans, or organize typologies of streets, buildings, open spaces, and other aspects of the physical environment. In transportation, for example, the transect is being applied to establish a more context-based framework for the design of urban thoroughfares.[16] And in land use planning, where there is now widespread interest in the potential of form-based coding as an alternative to use-based zoning, there are now dozens of firms creating their own model codes that reference the transect but are distinct from the SmartCode.[17]

Of Places, Theories of Places, and the Practice of Place Making

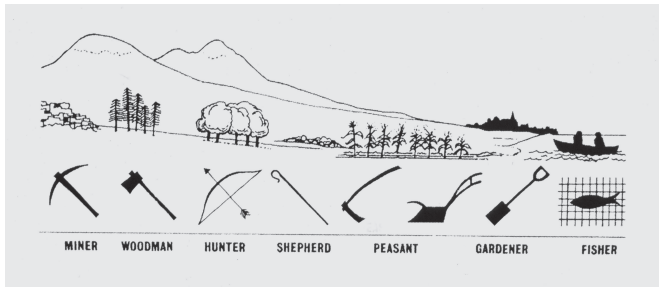
The transect has been proposed as a prism for analyzing the degree of urbanity of everything from building frontages to lampposts, street trees, and stores—and has even been applied to create humorous rural-to-urban transects of hair styles and shoes. Generally, the theory is represented graphically through a simplified typology of "transect zones." The transect most widely used by New Urbanists divides the human environment into six such zones, from very rural, to sub-urban, to urban. The capital letter T

Above: The general transect diagram may be calibrated to local forms and conditions, as in this example from Washington, D.C. Drawing by Dhiru Thadani for Ayers-Saint-Gross.



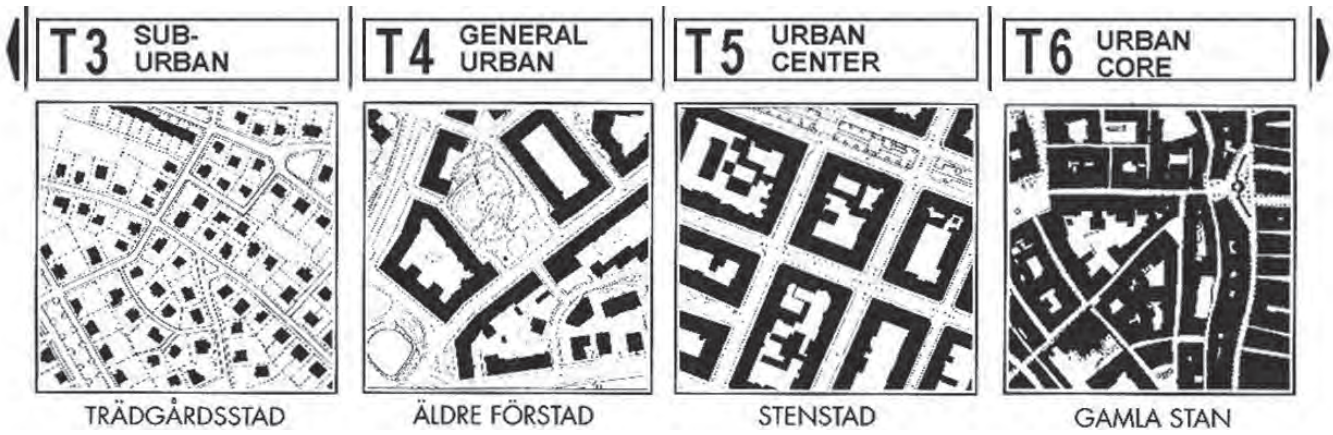
(for "transect zone") and a sequence of numbers provide a shorthand for referring to these areas: T1–Natural Zone, T2-Rural Zone, T3-Sub-Urban Zone, etc.[18] What distinguishes the physical character of each of these "immersive" settings is the manner in which everything—e.g., building types, heights, and setbacks; open spaces; the character of streets, alleys and passages; the design of street lighting, landscaping, trees, and street furniture—reinforces a certain overall physical character of place.[19]

For proponents, the attractiveness of the transect lies in its ability to present a simple and concise continuum of settlement types that can be employed to sort out rural, suburban and urban characteristics. Yet this very simplicity has also been singled out as one of its principal weaknesses. For example, critics typically object to the implication there must always be a smooth gradient of settlement patterns from rural to urban and from low, to mid-, to high densities. But this is not, in fact, a tenet of transect theory. The



Above: The first transect was conceived by Ferdnand Von Humboldt in 1793. Vertically exaggerated, it was taken across the southern tip of South America from the Atlantic to the Pacific, and included notations related to the surface, the subsurface, and the atmosphere. However, it records only natural phenomenon—nothing of human habitation appears.

Below: A century later, Scotsman Patrick Geddes drew the "valley section" from a ridgeline to a shoreline. Geddes's transect was the first to show the human presence associated with natural conditions, but typical of the nineteenth century, it presented this in exclusively exploitative terms.



theory specifically allows for the juxtaposition of different zones. Adjacencies such as between the residential neighborhoods of Coral Gables, Florida, and that city's downtown do not violate transect principles. Neither would the presence of a large natural area adjacent to a downtown. Indeed, such dramatic juxtapositions do occur in the case of Manhattan's Central Park, Philadelphia's Fairmont Park, and Rock Creek Park in Washington, D.C. Generally speaking, in terms of developing a plan for a region, juxtapositions of transect zones will create fewer problems than lack of consistency within a zone or an overall lack of variety of zones.

Another common criticism of the New Urbanist transect involves the relatively small number of zones into which it attempts to order a complete range of settlement types. In fact, its six conceptual transect zones were conceived as a way to *expand* the range of settlement types and satisfy a broader range of residential preferences than are available in today's climate of bland homogeneity.

As a typology of varying generalized conditions, the transect also parallels Sidney Brower's research on residential preferences. Brower has distilled some 33 qualities associated with broad concepts of ambience, engagement and choicefulness into four residential neighborhood types.[20] The four types are "centers," identified as denser neighborhoods associated with city living; "residential partnerships," similar in quality to conventional suburban subdivisions, and representing exclusive, homogeneous, family-directed neighborhoods; "small towns," closest in character to traditional towns and villages; and "retreats," including rural retreats, but also encompassing gated communities and condominium/apartment complexes.

Ironically, a third concern with the New Urbanist transect—quite opposite to the first two—is that its zones are *too* fine-grained and specific. In fact, early versions of the transect focused primarily on three general conditions: the urban edge, the general (as in "general urban neighborhood condition"), and the center. Those who prefer this typology believe it provides a looser framework that can potentially be applied within a single block. They argue that the more detailed the transect zone definitions become, the more problematic they will be for describing the complexity of actual cities.

While many of these criticisms contain elements of truth, they obscure one of the real strengths of the theory. Transect theory aims to establish a dialogue between an overall framework for regional planning and the use of locally derived design forms. Regardless of the number of zones delineated, transect theory always calls for a calibration of general ideas about rural, suburban and urban environments to reflect specific local and regional differences. A "General Urban Zone" in Louisville is not expected to resemble the same zone in Chicago or Miami. Differences in the extent to which mixed uses are present, varying combinations of building types, and local concerns for setbacks, landscaping and architecture are all anticipated. Thus, unlike conventional use-based zoning, the transect model requires research into regional architectural and urban forms, which can then be incorporated into more place-based regulations

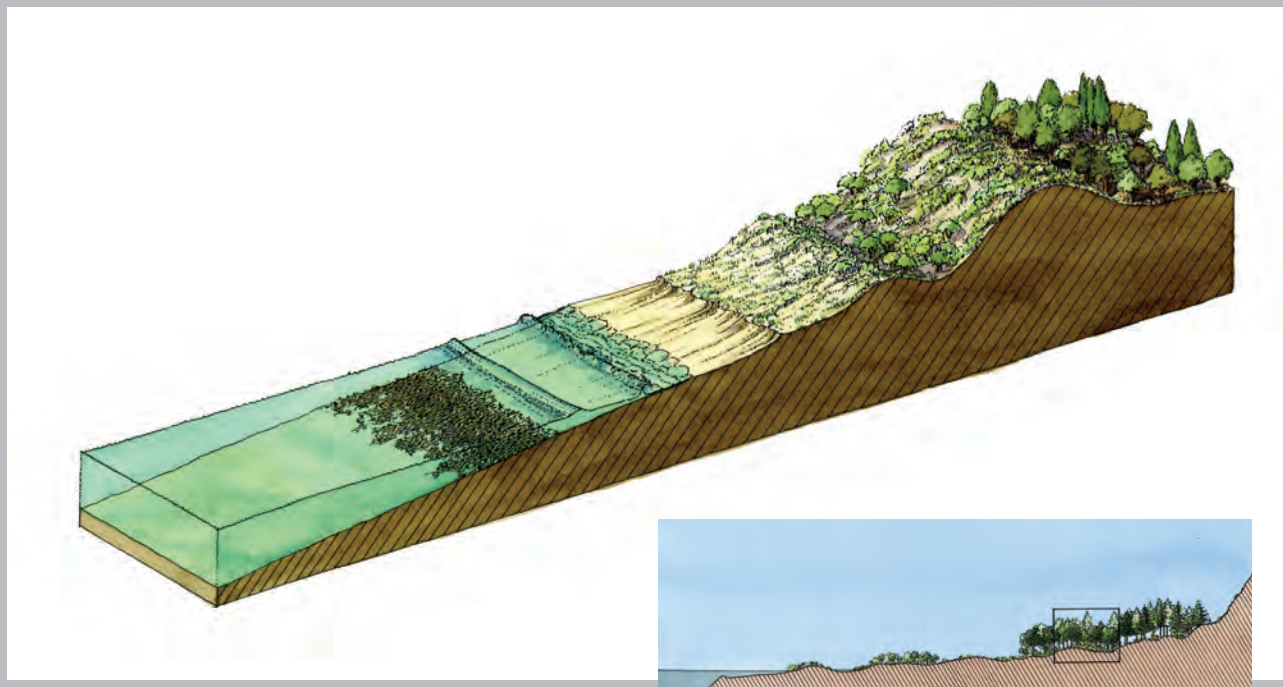
Above: This context-based calibration of the transect comes from the new code for the city of Stockholm. The code is unusual because it proposes that each zone be infilled in the character of the existing urbanism, thus controlling for an architecture of place rather than time. Peter Elmlund and Charles C. Bohl provide a more detailed discussion of the application of transect ideas to urban life in Sweden in their article on pp. 26-29. Drawing courtesy of Duany Plater-Zyberk & Company.

Concerns for Complexity

The transect has also been criticized for its failure to account for the complexity of places, particularly the complexity of historic villages, towns and cities. This is the critical perspective taken by Jaime Correa's article here. Correa uses examples of "transect violations" from European, Islamic, and Latin American cities to show how exceptions may embody the rule in terms of the cultural distinctiveness and historical evolution of settlements.

One cannot disagree with Correa's central point, that transect theory cannot prescribe or predict the complete variety and complexity of historic cities, developed over centuries. However, it is also true that recognizable common underlying structures may exist among places in such cities, and between the more rural, suburban and urban places of a particular region and culture. The desire to understand the formal basis of such similarities and differences is also not unique to the transect. Indeed, throughout history, from Aristotle to A.E.J. Morris, there have been many attempts to propose general principles of built form, and theorists have tried to describe the qualities of different types of places.[21]

Above: Older cities always manifest a variation of the transect; only recently have such distinctions been lost. This matrix of photos illustrates the typical character of urban zones—from T-3 sub-urban to T-6 core—in four American cities. Compilations such as these can show both local patterns and typological correlations between cities. Courtesy of Duany Plater-Zyberk & Company.



Nature and the City

Analysis by transect was first used by geographers and naturalists to describe and understand the workings of natural systems, including human habitats. In this spirit, in addition to providing a place-based approach to planning regulation, the rural-to-urban transect aims to better integrate environmentalist and urbanist values.

Urbanists often argue that well-meaning environmental regulations hinder the dense, contiguous form of traditional towns and cities, causing development to spread out over greater areas. But the relatively dense cities and towns urbanists advocate may conflict with environmental advocacy for uncompromised riparian corridors and animal habitats in even the densest human settlements. Environmentalists also speak of a need to "green the city"—which urbanists worry will damage the pedestrian continuity associated with successful urbanism.

In general, urbanists believe the integrity of human settlements should be given equal standing with that of the natural world. They point out that environmentalist positions and current regulations both would preclude the building of a new Paris, Rome, Chicago, New York, or Charleston. Environmentalists, on the other hand, believe that human settlements must conform to natural ecosystems to function correctly. They argue that cities must incorporate green strategies and technologies to reduce environmental impacts and improve the quality of life.

Although many people take positions between the extremes, new tools are needed to reconcile these differences. By considering urban and environmental values on a regional basis, transect-based planning may be a step forward in this area. Its advocates argue that by reducing the impact of sprawl, it may enable both dense human settlement and healthy environmental performance. It remains to be seen how far the opposing views can be reconciled in practice, however.

Both sides would benefit from studies of older, walkable cities such as Boston. The parks and natural areas of Boston's historic Emerald Necklace once reinforced important environmental systems. More recently, regional efforts to encourage urban density have also begun to restore the health of the Charles River, Boston Harbor, and Massachusetts Bay. Increased urban character need not conflict with improved environmental quality.

Above: In ecological analysis, the transect may be used to understand how physical and biological systems interact to create living environments. Ian McHarg's *Design with Nature* (1963) used this technique to describe the eco-zones of a typical stretch of land from beach to inland bay. This drawing by Duany Plater-Zyberk & Company is an axonometric interpretation of McHarg's original.
Below: The transect may also be used to generate detailed environmental assessment. A dissect (left) provides a description of typical conditions on, below, and above the surface in a specific eco-zone. A quadrat (right) allows quantification of all flora and fauna within a normative area. Similar techniques may be used to understand the character of urban districts.

Unlike many of these purely descriptive efforts, however, what Correa and similarly minded critics find most troublesome is the use of such descriptive typologies to guide the shaping of actual new communities and regions. They argue that, in this role, the transect would "replace the inefficiencies of one system with the promises of another with similar consequences." This critique (a potential concern for any proposed system), however, fails to engage the system that is presently doing so much harm. Place making and community building, at least in the United States, are currently regulated by coding mechanisms. Bringing positive change and reforming the current system will require effective alternatives. Further, to be legally defensible, an effort must be made to coordinate specific proposals for change with an underlying theory.

Transect theory clearly attempts to occupy a difficult position. As a new normative theory, it is variously criticized as too complex or not complex enough; too much like conventional zoning or not similar enough to underpin a legally defensible system. Others have embraced the transect as a theoretical framework, but maintained that the same results can be achieved using a more transparent terminology that does not resort to "T-zones." Such simplicity and transparency, however, have never been the hallmarks of planning codes and regulations.

One only has to examine the 227 pages of code, manual and appendices in version 8.0 of the SmartCode to see how difficult it is to move from the simplicity of the transect as a theory to actual code writing. As the transect is extrapolated into model codes, and as these are adapted for use at the urban and regional levels, it is natural that complexity will increase. For example, the SmartCode already distinguishes between three "plan types," seven "sector types," and four "community types"—in addition to the six transect zones, specialized districts, and separate guidelines for civic spaces and buildings. A close look at the simplified drawings of the six primary zones themselves will also reveal that these have continued to evolve so that two alternate conditions can now be seen within each zone except the T1 Natural Zone. These were developed, in part, to illustrate conceptual transitions from one zone to the next.

As a variety of form-based codes have been created by other community-building professions, debate has also ensued over which element (e.g., transect zones, street types, frontage types, lot types, etc.) should control the others. Similar debate has emerged concerning the significant differences encountered in applying transect-based approaches to new neighborhoods and towns versus existing cities. As one practitioner, Kevin Klinkenberg, noted recently:

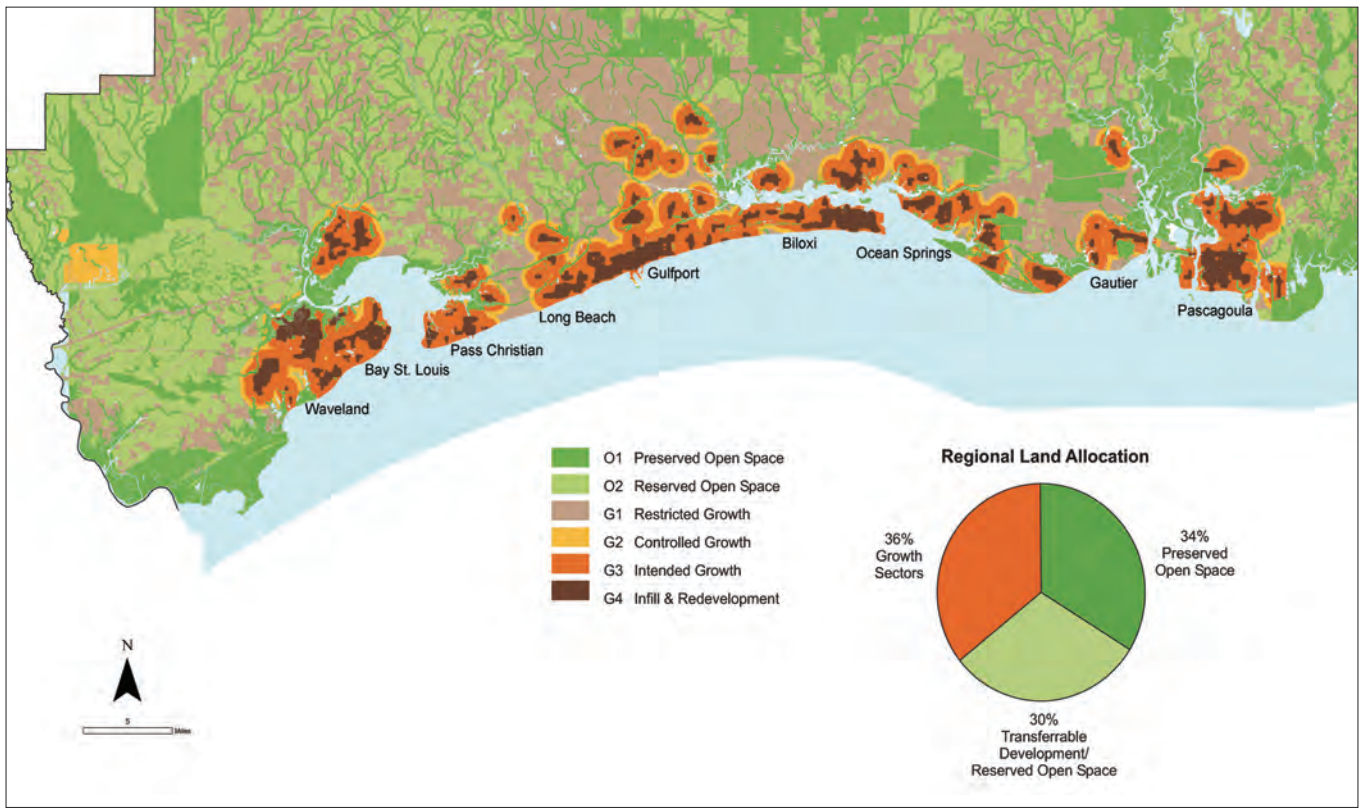
> *The problem I'm finding is: these tools, while perhaps getting us 80 percent of the way there, are not yet sophisticated enough to deal with the planning issues of large, contiguous areas of urbanism, especially in our older cities. The instruments seem not nuanced enough to plan for these environments, and their multiplicity of urban design issues. The Transect and SmartCode are exceptional for dealing with small towns, TND's, and smaller cities. But for the cores of our larger metropolitan areas, we're not really there yet. For example, a one square mile area of T5-Urban Center does not work in any way similar to a T5-Urban Center main street in a small town or TND.*[22]

Differences of opinion also exist within transect-based planning circles concerning the treatment of single-use areas. The transect typology does explicitly provide for single-use, special purpose areas ("districts") such as institutional campuses, airports, and heavy industrial zones. However, New Urbanists have long debated whether single-use residential subdivisions, office parks, and shopping centers should be included in the T3-Sub-urban Zone, considered the "bread-and-butter of American urbanism." As currently defined, the New Urbanist transect excludes these forms.[23] In contrast to large-lot, single-use, automobile-oriented subdivisions with very little connectivity, the New Urbanist transect defines the T3 zone as encompassing walkable, relatively compact, primarily residential single-family neighborhoods where other uses are also allowed. Thus, even though conventional single-use areas may be recognized where they exist, the implication is they will evolve over time into walkable neighborhoods that incorporate a mix of housing types and uses.

Toward a Culture of Good Place Making

The question remains whether any systematic approach to regulating place making and community building is capable of producing something close to "the good city." The excessive legal, technical and administrative constraints on place making and community building present a challenge, if not a crisis, for our generation's capability to build more livable, beautiful, and enduring communities.

The ideal has perhaps been articulated in Christopher Alexander's opus, *The Nature of Order*. This four-volume study, which extends his work on pattern languages, proposes a generative model of place making that will "allow anyone, and any group of people, to create beautiful, functional, meaningful places."[24] Perhaps the transect is just one step along this much longer path away from the



technocratic regulation of community design toward what Alexander envisions as a bottom-up model in which a culture of good place making is reborn, and where citizens directly participate in the shaping of the places in which they live, work, and go about their daily lives.

The theory and application of the transect is a work in progress, and is currently the subject of far more extensive discussion and debate than the sampling included here. Ongoing research and debate concerns everything from the establishment of environmental performance measures for transect zones, to the definitions of the zones themselves, to potential connections between transect theory and diverse philosophical traditions such as pragmatism and natural law.

As guest editors, we wish there had been room to include more of this discussion. Future articles might include an extrapolation of David Engwicht's notion of "exchange opportunities," by which a city's value might be measured according to the number and magnitude of potential exchanges, as explored through a transect of places for social encounter.[25] Eliot Allen's propositions for a more fine-grained transect of natural settings, which are currently reduced to T1-Natural and T2-Rural zones, also represents a rich topic for further study. A more explicit exposition on architecture and the transect, as briefly encountered here in the article by Gabriele Tagliaventi, would also be extremely useful.[26] The nuances of the transect in high-density cities for the purposes of form-based coding is also in need of further study. And, as the accompanying sidebar highlights, an in-depth piece might explore ways to use the transect to further resolve urbanist and environmentalist perspectives, allow reconsideration of relationships between built and natural environments, and reintegrate cities and towns within larger ecosystems. We hope the articles here open up a path for future inquiry and debate on these and many other place-making and community-building topics. We hope such debate will appear in future issues of *Places*.

According to the demographers, we have been pre-

Above: As a fractal, the transect can operate at the scale of architecture, the city, or the region. The Criterion system of transect analysis devised by Eliot Allen factors dozens of metrics provided by GIS to determine six regional zones. This system was used to create a regional transect for post-Hurricane Katrina rebuilding of the Mississippi Coast. Drawing courtesy of Criterion Planners.

sented with the opportunity to rebuild America. Unfortunately, if we continue to use the existing web of codes, standards and regulations that govern the development and redevelopment of our communities, we are doomed to continue building in unsustainable ways. If change is to come, alternative regulatory tools will need to be developed based on an entirely different set of desired outcomes. In particular, a new framework must emerge that will enable a greater variety and quality of places to be preserved and built. The rural-to-urban transect represents one alternative framework to guide such change.

Notes

1. James Howard Kunstler, *The Geography of Nowhere* (New York: Simon & Schuster, 1993).

2. Arthur C. Nelson, *Toward a New Metropolis: The Opportunity to Rebuild America* (Washington, D.C.: The Brookings Institution Metropolitan Policy Program, 2004).

3. Andrés Duany, "Introduction to the Special Issue: The Transect," *Journal of Urban Design*, Vol. 7, No. 3 (2002), pp. 251-60.

4. Rolf Pendall found clear links between bias in existing land use controls favoring conventional patterns and the development of sprawl: Pendall, "Do Land Use Controls Cause Sprawl?" *Environment and Planning B: Planning and Design*, Vol. 26, No. 4 (1999), pp. 555-71. Emily Talen and Gerit Knapp's study of planning regulations in Illinois found de facto prohibitions against more compact, mixed-use, walkable neighborhood design: see Talen and Knaap, "The implementation of Smart Growth Principles: An Empirical Study of Land Use Regulation in Illinois," *Annual Conference of the Association of Collegiate Schools of Planning* (Atlanta, GA, 2000).

5. See Eran Ben-Joseph, *The Code of the City: Standards and the Hidden Language of Place Making* (Cambridge, MA: MIT Press, 2005); Eran Ben-Joseph and Terry S. Szold, eds., *Regulating Place: Standards and the Shaping of Urban America* (New York: Routledge, 2005); and Paula M. Craighead, ed., *The Hidden Design in Land Use Ordinances* (Maine Arts Commission and the University of Southern Maine Design Arts Project, 1991).

6. Christopher B. Leinberger, "Retrofitting Real Estate Finance: Alternatives to the Nineteen Standard Product Types," *Places*, Vol. 17, No. 2 (2005), pp. 24-29.

7. Ibid.

8. Benton MacKaye, *Expedition Nine: A Return to a Region* (Washington, D.C.: The Wilderness Society, 1969). Emphasis added.

9. Nelson, *Toward a New Metropolis*.

10. Dolores Hayden, *A Field Guide to Sprawl* (New York: W.W. Norton & Co., 2004).

11. See William H. Whyte, ed., *The Exploding Metropolis* (Garden City, NY: Doubleday, 1958); Robert Venturi et al., *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form* (Cambridge, MA: MIT Press, 1977); and John Brinckerhoff Jackson, *Discovering the Vernacular Landscape* (New Haven, CN: Yale University Press, 1984).

12. Kevin Lynch, *Good City Form* (Cambridge, MA: MIT Press, 1981).

13. Duany, "Introduction to the Special Issue: The Transect." Also see Andres Duany and Emily Talen, "Transect Planning," *Journal of the American Planning Association*, Vol. 68, No. 3 (2002), pp. 245-66; and Emily Talen, "Help for Urban Planning: The Transect Strategy," *Journal of Urban Design*, Vol. 7, No. 3 (2002), pp. 293-312.

14. Andrés Duany et al., *SmartCode & Manual* (Miami: New Urban Publications, Inc., 2005).

15. The same is true of the work of Christopher Alexander, who presented *a* pattern language, not *the* pattern language.

16. The transect provides the basis for the four context zones in a 221-page report recently published by the Institute of Transportation Engineers. See James M. Daisa et al., "Context Sensitive Solutions in Designing Major Thoroughfares for Walkable Communities" (Washington, D.C.: Institute of Transportation Engineers, 2006).

17. Examples of form-based codes can be found on the Web site for the Form-Based Codes Institute (FBCI) at www.formbasedcodes.org.

18. Early on, a conscious choice was made to choose a designation system that would allow transect-based codes to resemble more conventional ones.

19. As noted by one reviewer of this article, "there are many more ways in which the character of habitat varies than 'from rural to urban' and that the character of place is fundamentally determined by the quality of experience, including social experience that it affords and while these are qualified by the physical they are not determined by it." The authors concur. Potential relationships between physical character and quality of experience are a core subject of environment and behavior research. In contrast to those who would diminish the importance of the physical environment as "physical determinism," however, the authors maintain the essential role that the physical environment plays in *environmental affordance*, through which different configurations and qualities of the physical environment variously enhance or constrain opportunities for different types of activities and meanings.

20. See Sidney N. Brower, *Good Neighborhoods: A Study of In-town and Suburban Residential Environments* (Westport, CT: Praeger Publishers, 1996); and Sidney N. Brower, "The Sectors of the Transect," *Journal of Urban Design*, Vol. 7, No. 3 (2002), pp. 313-20.

21. A.E.J. Morris, *A History of Urban Form: Before the Industrial Revolutions* (New York: John Wiley & Sons, Inc., 1994).

22. Interview with Kevin Klinkenberg, principal, 180 Degrees Design, member of the Form-Based Codes Institute and 2003-2004 Knight Fellow in Community Building.

23. Subdivisions, office parks, shopping centers and other conventional suburban formats are identified within the SmartCode as a list of single-use categories for the purposes of mapping existing conditions, but not for the purposes of plan-making.

24. Christopher Alexander, *The Nature of Order. Book One: The Phenomenon of Life* (New York: Oxford University Press, 2002); *Book Two: The Process of Creating Life* (New York: Oxford University Press, 2002); *Book Three: A Vision of a Living World* (New York: Oxford University Press, 2005); *Book Four: The Luminous Ground* (New York: Oxford University Press, 2004).

25. David Engwicht, *Reclaiming our Cities and Towns: Better Living with Less Traffic* (Gabriola Island: New Society Publishers, 1993).

26. For one example, see Michael Lykoudis and Philip Bess, eds., *Acroterion: The Work of the University of Notre Dame School of Architecture 2004/2005* (Notre Dame, IN: University of Notre Dame School of Architecture, 2005). This presents an