Introduction:

Standards and Rules in Shaping Place

> All bad precedents began as justifiable measures.
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> —Gaius Julius Caesar

No single person dreamed of constructing a sprawling monotonous suburbia in the jungles of the Amazon, or decided to spite Jeff Slavin for his desire to offer denser and more affordable housing. It was the codes and the standards. Across the globe, communities are shaped by standards and codes that virtually dictate all aspects of urban development. Simple standards for subdividing land, grading, laying streets and utilities, and configuring rights-of-way and street widths may seem sensible and insignificant, but because they have been copied and adopted from one place to another, they have an enormous impact on the way our neighborhoods look, feel, and work.

Today's regulations represent the sum of decades of rules designed to promote particular practices. Originating in the desire to improve conditions in urban areas in the late nineteenth and early twentieth centuries, standards became the essential tool for solving the problems of health, safety, and morality. Assuming controls over neighborhood patterns and form, standards shaped the largest segment of urban development in twentieth-century America: the suburbs.

Because so much has been built according to these dictates, the accumulated rules now have the force of universal acceptance—standards have become the definers, delineators, and promoters of places, regardless of variations in landform, natural systems, and human culture. Like genetic code in biology, standards are the functional and physical unit of planning legacy, passed from one generation to the next.

At the present moment, the long historical trend of regulating city building has reached a critical juncture. The expanded application of alternative development regulations and improved development outcomes, such as new urbanism, reflect a kind of societal learning that has resulted from the variety of failures associated with conventional standards. A fresh set of choices is now available, driven by local empowerment, adaptation of place-based guiding principles, and renewed interest in urban form and design. Regulations can continue to accumulate, piling up ever more uniform rules as government and professional inertia carries them onward—or they can evolve, causing a shift in emphasis toward site-specific and localized physical design.

This book reviews the history that brought the modern city and its suburbs to this decision point, and it explores the alternatives now appearing on the urban and suburban landscape in which what is appropriate to be designed and built is found in the facts of cultural distinctiveness and what is normal given the circumstances of place. The intent is not to champion the abolition of regulations or advocate the elimination of all controls or government interventions, but rather to illustrate their evolution and ongoing contemporary effects, and to encourage change where and when needed.

This is a critical point. There is extensive literature by various experts that deals with the numerous forces affecting urban form. From *De architectura* of Roman architect and engineer Marcus Vitruvius Pollio to the contemporary writings of designers such as Christopher Alexander's *A Pattern Language,* Rob Krier's *Urban Space,* and Rem Koolhaas's *Mutations,* many authors analyze and draw normative lessons from cities' shapes and configurations. Historians, geographers, and urbanists such as Camillo Sitte in *Der Städtebau,* Lewis Mumford in *The City in History,* James Vance in *This Scene of Man,* and Spiro Kostof in *The City Shaped* endeavor to understand the form and shape of our cities in their historical and morphological context. Other scholars reflect on the shaping of cities through the eyes of politics and social dynamics. These writings include *Bourgeois Utopias* by Robert Fishman, *Architecture, Power and National Identity* by Lawrence Vale, *La règle et le modèle* by Françoise Choay, and *The Power of Place* by Dolores Hayden. Markets, finance, and wealth inspired nineteenth-century books such as *The Isolated State* by Johann von Thünen, and in the twentieth century, Walter Christaller's *Central Places* and William

Alonso's *Location and Land Use,* which model and predict cities' form on economic and fiscal forces.

In writing this book I have sought to provide neither a survey of these vast and diverse forces shaping cities and towns nor a comprehensive description of their resulting plans. Instead my purpose has been to search out and reveal an important aspect of urbanization: the evolution and role of rules and codes used by societies to create and transform their surrounding physical fabric, and by doing so to provide direction for the design of future residential subdivisions.

Standards and Their Scope and Influence

In the realm of urban planning, standards are extensively used to determine the minimal requirements in which the physical environment must be built and must perform. But they are also seen as the legal and moral instruments by which professionals can guarantee the good of the public. This intent is apparent in the regulation and control over the design and planning of communities and subdivisions.

The past two centuries have been marked by a sustained effort to bring order and safety to the city building process. But what began in the early nineteenth century as a few local and national regulations throughout the United States and Europe is now a worldwide effort toward standardization.

The scope of standards encompasses many different elements of urban and suburban infrastructure. Their influence emanates from and is applied at different levels of government—local governments define land-use controls, building codes are often nationally determined, and state and national environmental legislation affects local development practices. Professional associations and government endorsements have converged to give standards their reach and power. Methodical administration of public works, the centralized supervision of land development, and the rise of the engineering and urban planning professions have established design standards as absolutes.

Certainly, development standards ensure a certain quality of performance, as do many construction standards that are designed to protect our health and safety. However, local governments often automatically adopt and legitimize these standards to shield themselves from lawsuits and from responsibility in

decision making. Financial institutions and lenders also are hesitant to support a development proposal outside the mainstream, particularly when it does not conform to established design practices. This happens despite the fact that a mainstream, by-rote solution may be less desirable in its results than a new and creative approach.

Little has been written regarding the actual physical impact of standards on the built form. This may be due in part to the nature of their format, their complex array of criteria, and/or their perplexing idioms. Existing literature in the area addresses various aspects of the subject either as isolated case studies, involving such topics as building codes, or in general terms, focusing for example on the economic impact of standards and regulations on infrastructure development. There is little discussion of the reasons for their widespread adoption in the realm of city planning and design. The lack of attention may also reflect a possible underestimation of the overall influence of standards on form and spatial quality.

Just as genes are obscure, difficult to trace, and often misunderstood as to their impact on bio-organisms, so too are the influence of design standards and their impact on the built environment opaque. The incremental nature of standards reduces each requirement to a singular, discrete mandate. As such, the influence of each standard may seem relatively minor by comparison to the wealth of other variables that are part of the process of urban planning and development. However, when viewed in their totality, their cumulative force has a tremendous effect on the design of places that thus far has been unnoticed.

Today, communities face problems that have arisen because standards intended for health and safety have become disconnected from the original rationale for their existence. These disconnections have overtaken many standards and regulations because the standards have failed to be responsive to their negative impact on the natural and human environments. Residential street standards offer a good example.

Originally intended to afford ease of movement and effortless driving, right-of-way widths and turning radii for these local streets have grown to excess. For the last six decades, such standards demand 50 to 60 feet for the rights-of-way, 36 feet for driving lanes, and a 50–70 foot radius for cul-de-sacs. These standards not only encourage and allow for high-speed driving in residential neighborhoods, but also consume and pave over much desirable open land. In

a typical suburban subdivision, with 5,000-square-foot lots and 36-foot streets in a 50-foot right-of-way, street area amounts to approximately 30 percent of the total development. When typical 20-foot driveway setbacks are included, the total amount of space earmarked for cars and driving reaches about 50 percent of the development.

Such land-consumptive requirements often prevent unconventional suburban design practices, such as more densely built developments. As a consequence, opportunities for adaptation and innovation are frustrated and alternative development proposals and building experiments that violate existing standards but might be of great service in creating desirable and sustainable communities are lost.

Revealing the Hidden Language

This book places current planning issues in the historical context of rule and code making. It offers a narrative that takes the reader through the historical evolution of design standards, to an examination of the effect of design rules and codes on the built environment, to a consideration of future directions in the shaping of the regulatory template and place making. Particular attention will be given to residential subdivisions, especially the current template for this type of development that is spreading across the world.

Central to the issue of standards and place making are three sets of questions:

1. *Questions of origins and diffusion* How were design standards first generated and adopted? Why, when, and how did urban planning and urban design become dependent on codes and standards? And how are they disseminated, practiced, and enforced?
2. *Questions of performance and outcome* What forms of development have resulted from the codes and standards, and what are their deficiencies? What impact do urban standards have on social and environmental conditions? What are the consequences of the growing uniformity of design standards? How are design standards viewed by those who administer them and by those who must abide by them? And what criteria should be used to measure success, and to determine if standards should be changed or eliminated?

3. *Questions of transformation and opportunities* What are the implications of restructuring design standards? What processes and tools can foster change? Can technological innovations and new forms of information delivery and computing manipulation interfaces create a flexible and more open approach to urban regulations and the application of standards?

To provide answers to these questions, the book is organized into three corresponding parts. Part I, "The Rise of the Rule Book," sketches the historical context and framework in which urban standards and norms have evolved. The chapters in this section describe the factors that have played a major role in the development of standards for urban places. They tell the story of standards and early civilizations, the rise of law and public order, and the establishment of planning and design disciplines and their technical applications. This section begins with chapter 1, "Holding the Commons," which discusses some of the earliest forms of urban standards, those that were characterized by systems of rules based on the power of a sovereign authority, often set apart by divine right and top-down restrictions.

Urban standards have also been shaped by the establishment of professional disciplines and their specific paradigms of practice. Chapter 2, "Experts of the Trade," describes the role of professions that shape urban form, particularly that of land surveying. As part of their early organization, these disciplines had to endorse and apply specific paradigms. This mode of practice enabled the groups to consolidate their positions and define themselves as experts. Thereby the mastery of professional knowledge restricted the role of outsiders to that of uninformed participants with no authority to question professional solutions.

The rapid pace of urbanization in the nineteenth century brought forth an environmental chaos that was linked to the social problems of urban life. At the time congestion, overcrowding, and deteriorating sanitary conditions were believed to cause social and moral degeneration. The desire for better living conditions prompted interventions by public authorities. These interventions provided the foundation for the form and shape of new neighborhoods to come. Chapter 3, "Neighborhoods Developed Scientifically," describes some of these early regulations.

Part II, "Locked In Place," illustrates how standards are forcing an exclusive planning process and limiting alternatives for physical design. The chapters in this section provide examples to demonstrate how standards have contributed to the shaping of neighborhoods and cities. They also cover attitudes among both the private sector and public agencies about the extent, nature, and effect of standards on development in the United States, as well as the influence of these standards on development overseas.

Chapter 4, "Sanitized Cities," illustrates how past technological choices have shaped current planning practices while often discouraging change. Like many other aspects of city infrastructures, sewer-system standards, for example, are so entrenched and widely accepted that alternative planning, sizing, and locating of the systems are seldom considered. Should standards be based on technologies within the current paradigm, or should they be based on the long-term goals decision makers want to achieve? Next, chapter 5, "Regulating Developers," evaluates the impact of standards and regulations on the design of residential developments. It assesses common attitudes and perceptions, and identifies the issues that members of the housing industry and its regulatory agencies feel are affecting housing development.

Concluding this part of the book, chapter 6, "Second Nature," discusses the impact of standards on the landscape and its natural systems. One of the most troublesome stages in the site-development process involves the clearing of existing vegetative cover. The desire to cut costs by executing massive grading with heavy equipment often results in complete alteration of the landscape and degraded environmental conditions. Local governments have generally recognized the consequences of such practices and many have adopted standards for this development phase. Yet these regulations are not only poorly implemented and enforced; they are seldom revisited or revised.

By becoming more aware of how standards have evolved over time, and how profoundly they affect our places of living, many seek a more equitable planning process, and look to improve the design of our built environment. Part III, "Altering Inherited Traits," takes as its focus the likelihood of a paradigm shift. It points to new conditions that ultimately must lead to change in the application of rules and standards to development. These new forces can be seen in the growing environmental awareness of the public and private sectors,

as well as in new partnerships between the two in the development of sustainable technologies, and in the introduction of new tools for facilitating public participation in place making.

Chapter 7, "Private Places and Design Innovation," describes how private developments are pushing the sustainability envelope, protecting their environmental resources in an effort to increase marketability and financial return. This has resulted in a transition from traditional individual ownership of property to collective governance. This fundamental change not only represents a shift in neighborhood governance, but most significantly calls forth a change in the physical character of residential development—often in the form of innovative spatial and architectural layouts, in some cases as a result of unusually sensitive environmental design. It also creates a de facto deregulation of municipal subdivision standards and zoning. Many of the ecological concepts of these private communities can be applied to the broader housing market, given the consumer's willingness to pay for environmental quality, or by offering public incentives to fill the economic gap.

While two-dimensional maps, charts, and diagrams to computer models allow "experts" to explain their designs and planned interventions more clearly than ever before, few platforms exist that allow immediate, real-time, and seamless changes in response to public or professional input. New and promising technologies are discussed in chapter 8, "Technogenesis and the Onset of Civic Design." These innovations have the potential to create a paradigm shift in the application of design standards to the process of place making. These new systems could be used not only as tools for design professionals but also as an interactive application to enrich communication and learning within the design process. The integration of such envisioning tools will allow for better professional judgments while incorporating various stakeholders' expectations.

The concluding chapter—chapter 9, "Places First"—calls for a design methodology consistent with and based on site-specific context. Only local conditions and physical context should provide the threshold for the formulation of standards and codes. Regulations should be place-based, emphasize details, and be buttressed by public approval. As more communities wrestle with problems due to uncontrolled growth, environmental pollution, and failures of the existing infrastructure, they are likely to take a stronger interest in their

local power. Thus the possibility for communities to establish their own initiatives for localized place-based standards can be realized.

No doubt, regulations will continue to exert influence and shape the built form of the global landscape. The future of the regulatory shaping will inevitably evolve from the templates we have used in the past. But if regulations are too inflexible to allow for innovation, then perhaps we must work to see that they are changed.

Above all, planners and designers must take formal stands against the adoption of rules that perpetuate mediocre development outcomes. There should be a willingness to test standards, not only in relation to preventing harm or preserving property value, but in relation to their impact on the physical form of communities.

Standards are the source of how communities are designed and built. They define how places *can* and *can't* be developed, and how controls shape the physical space where we live and work. It is the aim of this book to help unmask and explain this relationship, for though standards will continue to exert their influence on the shaping of our towns and cities, we must not allow them to prevent excellence and innovation in our quest for better places.