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The Code of the City: Window on a Labyrinth

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As every architect and landscape architect knows, the form and shape of what we design and build today is conditioned profoundly by a myriad of zoning ordinances and building codes. In the preface to his valuable new book, *The Code of the City: Standards and the Hidden Language of Place Making* (Cambridge, MA: MIT Press, 2005), Eran Ben-Joseph describes his own experience as a landscape architect fresh out of graduate school and eager to change suburbia. “Minimum lot sizes, setback requirements, right-of-way regulations, roadway width standards, fire truck access codes, maximum density allowances, and so on could only have one outcome: things would be the same as they had always been.”

Arguably, codes and regulations exert more force on the shape and nature of the contemporary urban landscape than any other category of human production, tenaciously resisting any attempt at innovation. Yet, except for discussions of “smart codes” and other issues commonly associated with the New Urbanism, codes have not received much attention in design or planning literature. Certainly, no comprehensive study of their impact on the shape and form of our towns and cities, especially since World War II, yet exists.

Part of the difficulty in such an undertaking is the ubiquitous and diffuse nature of this body of regulations. Each of the 164 municipal jurisdictions that comprise metropolitan Atlanta, as just one example, employs a separate zoning ordinance. Fire and life safety codes typically reside at the state level; subdivision regulations, though locally enforced, typically default to state department of transportation street standards; and in turn, these standards typically reference guidelines established

by professional organizations such as the Institute for Transportation Engineering (ITE) and the American Association of State Highway and Transportation Officials (AASHTO).

To even attempt a large-scale survey of these issues across the nation, much less the world, is more than a daunting task. In this regard, *The Code of the City* performs a valuable service, opening a window on a serious and demanding topic. Other than Ben-Joseph’s earlier work, *Streets and the Shaping of Towns and Cities*, co-authored with Michael Southworth (Washington, D.C.: Island Press, 2003), and the aforementioned discussions of “smart codes,” the spatial impact of the regulatory environment remains a seriously underdeveloped area of scholarship.

Codes through History

The Code of the City is organized around posing, and then attempting to answer, three types of questions: about origins and diffusion; about performance and outcome; and about transformation and opportunity.

In its first section, “Rise of the Rule Book,” it traces the historical development of codes from the ancient world to the arrival of zoning in the first quarter of the twentieth century. Beginning with a description of the “Burning Man” gathering in the Nevada desert, Ben-Joseph makes the case that “health, safety, logistics, and environmental degradation required centralized intervention, rules, and regulations.” This is a point well taken: complex human settlement patterns, even ephemeral and temporary ones, need principles of spatial organization. The collective order must trump the individual, to the benefit of all.

From here, the reader is taken on

a whirlwind historical journey from the code of Hammurabi to twentieth-century Riyadh. This excursion appears rhetorically necessary to foreshadow a recurring theme: “What is appropriate to be built and designed should be found not in the vision of ideal average and social homogenization, but in the facts of cultural distinctiveness and in what is normal given the circumstances of the place.” Unfortunately, such an overview cannot provide sufficient depth to be of much use to the serious student of the ancient city; nor does it contribute substantially to the larger discourse of the book.

Despite the fact that the Romans built more than a thousand cities from northern England to Mesopotamia—all from the same template of *pomerium*, *cardo*, *decumanus*, *forum*, and *capitolium*—each city developed its unique character over time. In the same way that a courthouse town in Tennessee may have been built to the same pattern as one in Oklahoma or Southern California, the Roman capital of Britain, Eburacum (present-day York), was built to the same pattern as the Roman city of Aelia Capitolina (present-day Jerusalem). That two cities in such different locations and with such different cultural identities could have originated from the same set of rules would seem to undermine, or at least call into question, the assumption that truly responsive codes can only develop from local circumstance and social norms.

Once past this historical overview the chronology slows to a more reasonable pace, providing a concise and useful description of the development of present-day zoning and subdivision regulations and the parallel development of modern professional standards and conventions.

This is a major strength of the book. As complex problems arose out of living conditions in rapidly expanding nineteenth-century cities, codes promoting health, safety and welfare developed of necessity. Simultaneously, the organization of the industrial economy and the rise of new technologies led to a proliferation of professions based on increasingly narrow and specialized fields of knowledge. This coincided with the establishment of programs of specialized study at existing universities and their proliferation across the nation through new land-grant colleges and universities.

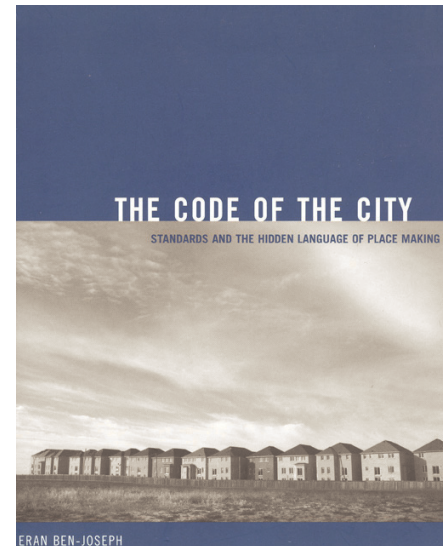
The example par excellence of this simultaneous development is the rise of the transportation engineer. "It was only in 1867 that the American Society of Civil Engineers was established," Ben-Joseph writes. "Similarly, the establishment of land-grant colleges in the 1860's offered a venue for professional engineering education far removed from the military academies and common on-the-job training. The need for specialization in road and traffic engineering as a result of rapidly changing transportation requirements impelled the formation of the transportation engineering profession in 1930 through the National Institute of Transportation Engineers (ITE)..."

The stated purpose of the ITE was to "achieve efficient, free, and rapid flow of traffic; yet at the same time to prevent traffic accidents and casualties." Ben-Joseph rightly argues that this combination eventually led to the institutionalization of standards promulgated by the professional organizations and adopted by government, giving professional conventions the force of law. His criticism of this outcome is straight and to the point:

Residential Streets should be more than traffic channels. Primarily, they should be the place for community interaction and neighborhood development. Streets, particularly in residential areas, provide a visual setting, a meeting place for neighbors, a play area, an entryway to and from each house, and a pedestrian circulation system. Ideally, their design requires an understanding not just of traffic patterns and capabilities, but of multiple users, social behavior, architecture, and urban design. However, these "fuzzier" elements are often hard to measure, and more to the point, do not fit within the professional paradigm of engineering practice.

It would be difficult for anyone to argue with this analysis. Yet, by itself, it does little to suggest a way out of the mismatch between the historical social and political purpose of street and more narrowly focused concern over efficiency and safety of movement. Here Ben-Joseph calls into play a distinction between "performance" and "specification" standards.

Typical standards for street layouts, like those issued by the ITE, are specification standards. That is they are codes that specify the features of objects (so many feet or units of) or the range within which features must lie (i.e., at least so many feet of, or between x and y units of). Performance standards, similar to the norms applied in the Islamic city, do not specify how things must be, but what they must or must not do or what their capacity or impact must be.



While local examples of alternatives to conventional practice are provided throughout the book, and especially in chapters 6 and 7, *The Code of the City* provides no explicit example of how a performance code might be implemented on a citywide scale. As a result, the reader is left to wonder what such a performance standard might look like in practice.

It may be, as Ben-Joseph argues, that a distinction between performance and specification standards is at the core of our present conundrum. Specifying street widths, quantities of allowable runoff, and density of development is clearly easier than specifying how a particular street is to behave. But this opens the question referred to earlier: what is the appropriate balance between the dimensional regulation inherent in a specification standard and the allowance of interpretation and variation needed to accommodate and respond to local circumstance? This issue deserves further exploration in scholarly literature. Without it, it is hard to tell if Ben-Joseph's faith in performance standards is justified.

Conventional Practice

The preference for performance standards foreshadows Section II of *The Code of the City*, which elaborates the development of professional conventions of practice. Beginning with the cholera epidemics in Paris (1832) and London (1854), sanitation movements became associated with new sewer infrastructure, and coincided with the growing establishment of the civil engineering profession.

As Ben-Joseph points out, early alternatives to waterborne, piped disposal systems for human waste and urban runoff were dismissed by engineers such as Edward Philbeck in Boston as early as 1875. Ben-Joseph follows a discussion of the subsequent entrenchment of conventional practices with examples of recent alternatives such as the “Living Machine” experiment in South Burlington, Vermont, and the reasons they, too, have been rejected by the professions. Again, Ben-Joseph states his preference for performance standards. The main example he gives is from Washington State, where an initiative to ensure on-site, or “package” treatment facilities, “gives every practitioner a stake in the success of each system by assuring the owner that the alternative system will perform as designed.”

While such examples offer much food for thought, the case might be stronger if more evidence were presented of why the conventional practices are a problem. Strictly speaking, conventional practices in engineering and planning are not standards—at least not in the same way that “specification” standards are—especially when they carry the force of law.

These distinctions are important in that they will require alternate strategies for change. Yet in *The Code of the City*, legal standards such

as subdivision regulations or zoning ordinances are conflated with conventions of practice to such an extent that the reader must work to keep track of what is a legal standard and what is in reality a conventional mode of professional practice. The two categories are unquestionably related; but again, this is not a well developed area of scholarship. As Ben-Joseph shows, often a professional convention is adopted as a regulation. It may then be passed on like a computer virus to subsequent generations of code writers, even when there is little or no evidence that the original standard was intended to be applied universally.

Alternative Forms

In Section III, “Private Places and Design Innovation,” Ben-Joseph describes the growth in popularity of common-interest communities and developments. Called CICs or CIDs, these are part of a larger trend toward the takeover of some of the traditional functions of municipal government by smaller, quasi-governmental units. Ben-Joseph Acknowledges the chorus of critics who see the growth of such private-interest planned communities as “an exclusionary and elitist means by which the rich can physically segregate themselves from the lower and middle classes.” But he also sees a glimmer of hope in these alternative forms of community building.

Here the book provides a valuable service by pointing out that despite their potential social and spatial problems, such communities offer a vehicle for experimentation. Unencumbered from municipal “specification” codes, developers, designers, engineers and planners can experiment with “narrowing streets, using alternative paving materials to reduce impervious surfaces, and constructing vegetative swales instead of concrete gutters.”

According to Ben-Joseph, the benefits of such alternative practices would include reduced costs, more favorable ecological conditions, and greater ease of approval.

These benefits are assigned without question, however, as though they were a universally acknowledged “good.” Yet, it is difficult to imagine, for example, how cities such as Paris, Savannah, or San Francisco would benefit from having more narrow streets and more vegetative swales instead of curbs.

One way this rhetorical question could be answered since the onset of the digital revolution is through simulation of outcomes. At the end of the book, Ben-Joseph discusses the potential of three-dimensional visualization tools such as UCLA’s City Simulator and the “Tokyo model” developed by telecommunication and utility companies in Japan. The real benefit of these tools, he argues, is to allow citizens to participate in the planning process by visualizing the real impacts of large projects.

Certainly, there would be enormous potential to having tools that could predict the outcomes of codes, rules, practices, and proposed developments prior to their implementation. Though extremely powerful as determinants of urban form, standards, ordinances, and other rules are readily enacted today without any real testing of their likely three-dimensional outcomes.

At the end of its next-to-last chapter, the book gives voice to an idealized optimism:

It is sometimes said that democracy requires an enlightened republic. By promoting the communication that is critical to that enlightenment, new tools that integrate three-dimensional modeling and tangible interfaces

will have a profound impact on the politics and discourse of making better places.

The question of which reality is to be projected, however, remains problematic. But in his concluding chapter, Ben-Joseph outlines two alternate futures. A century ago, he argues, “the choice lay between the dangerous and costly circumstances of a ruthless private market and public standards and regulations.” But today, “the alternatives are either to follow the path of inertia by continuing to pile regulations atop their tottering early twentieth-century base, or to adopt a flexible set of practices and rules that would allow subdivision and construction to respond to the particulars of place and environment.”

From this realization, a “Path to Transformation” is paved with eleven recommendations, which can be grouped into three main categories.

First, the book argues, the present body of codes and regulations has been developed in a spatial vacuum. Even though the supposed goal is good design, the prescriptive nature of law and the need for its equal application has created a legal labyrinth often devoid of understanding of actual spatial consequences. Architects, landscape architects, and planners need to become more directly involved in the development of this body of law; but they are often ill-equipped to do so. Thus, expert knowledge from outside the fields of design and planning, especially law, needs to be brought equally to bear on urban design issues.

Second, national organizations such as the ITE and the American Planning Association have begun to move away from strict adherence to specification norms. This should be encouraged. A variety of options for statutory reform should be advanced

rather than the “one-size fits all model.” Low-cost ecological solutions responsive to local conditions should also be not only allowed, but encouraged. The devolution of federally controlled mandates to locally controlled practices should occur. Specific examples of how this might work include the Transect Code developed by Duany Plater-Zyberk & Company and adopted most notably in Nashville, Davidson County, Tennessee.

Third, local control means involving citizens into a visioning process to identify those things that are most important to each community. Simulation of outcomes is now possible through technologies that allow direct citizen input into the planning process—not in two dimensions, but three. The missing ingredient in the process is the master plan. Weakened or jettisoned altogether after its initial prominence in city planning enabling statutes of the 1920s, it needs to be brought back as a primary decision-making vehicle. The master plan should embody the goals and aspirations of the community translated into three-dimensional, spatial outcomes. Conceivably, this could level the playing field sufficiently to untangle the political process of plan approval.

Accommodating Change

Underlying these recommendations and throughout the book, Ben-Joseph expresses a clear preference for performance over prescriptive standards. Perhaps performance standards, rather than prescriptive codes, may open a new avenue that treats local circumstance and social norms as the basis for future development. On the other hand, how performance standards would be developed and applied at the scale of a city remains an open question.

Cities change. The ability of street,

block, and lot dimensions to accommodate change would seem to be an area in need of further development. As *The Code of the City* suggests, a place to start would be the simulation of the spatial outcomes of our present codes, especially at the urban scale. Before changing the prescription, it might be useful to know what the current one is doing.

It is also unclear whether prescriptive standards are a problem because they are prescriptive, or because they prescribe the wrong things. At some point, streets, blocks and lots must have a dimension; the present prescriptions may simply be aimed at the wrong set of outcomes. As the Roman city shows, the dimensional attributes of a common template allowed cities such as Paris, London and Florence to survive and even prosper through profound changes in land use, social norms, and constructional conventions.

The Code of the City is an important book. It explains how a collective body of codes, ordinances, regulations, and ossified conventional practices are the primary generators of contemporary urban form. As the brilliant opening description of the “Burning Man” in the Nevada desert reveals in parable-like manner, collective order is required in a civil society. But as these codes and practices have developed in tandem with the rapid growth of urban metropolitan structures, they have produced a labyrinth of rules that make innovation difficult and beneficial historical models obsolete.

The way out of this labyrinth can only be navigated by a profound understanding of the way in—of the journey that took us into the labyrinth in the first place. *The Code of the City* opens this dialogue and offers a glimpse, if incomplete, of where the way out may lie.