Article

The Visual Culture of Planning

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Abstract

Over the course of the twentieth century, American planners deployed an array of visual techniques to analyze, represent, and promote the American city. Early planners looked to maps of poverty, disease, ethnicity, war, and land use, as well as archaeology, world's fairs, and the photography of social reform. They became adept at combining drawings, diagrams, and charts to map information and make visual arguments for urban transformation. These techniques were tools of cultural critique and anticipation that shaped American understandings and expectations of cities. This essay surveys the imagery of urban planning as a prompt to historians to pay close attention to the visual culture of urban planning.

Keywords

cartography, Kevin Lynch, Olmsted, John Nolen, Elbert Peets, Edmund Bacon, Gordon Cullen, Ian McHarg, New Urbanism, urban design

In 1944, Joseph Hudnut, the Dean of Harvard's Graduate School of Design, likened the master plans that filled the shelves of architecture and planning libraries to tombs. They were to Hudnut "bound in bourgeois cloth... and fattened with statistics... like *amorini* above a rococo altar."¹ The maps, charts, and diagrams of modern planning were as unconvincing to modernists as the late Baroque had become. His condemnation hides a powerful insight: planners had aestheticized statistics and, like the *putti* above an altar, made them sacred and buoyant. The observation deserves elaboration. Planners indulges in the same world of image making that artists and advertisers do. Some of these images are at once analytical and artful, even mesmerizing. If planners have opted most often for dry imagery, it is still imagery, with all of the complicated and rich implications of that term. Every plan is an act of persuasion, an argument for an alternative way of life that attempts to convince an audience of a potential future based on the raw data of the present.

This essay sketches out the range of visual strategies American planners have used across the twentieth century and suggests ways of reading images in urban planning.² Such an expansive topic demands broad disclaimers and stringent boundaries. Planning is many things and is done at many scales, from Frederick Law Olmsted's studies of parks, narrower traffic studies, and reports on infrastructure to master plans, regional planning, urban design, and land use planning. Planners,

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likewise, come from many backgrounds. Their strategies and tools and the nature of their work vary according to their training and have changed over the twentieth century. Nonetheless, as cities have pondered their futures, they have reached out to architects, landscape architects, engineers, and, especially after World War II, to professional planners and urban designers to help them visualize their cities. The way planners have presented this future in graphic terms forms the crux of this essay.

The essay situates the imagery of planners in a wide visual and cultural context and offers readings of a number of types of images. These include Burnham and Bennett's 1909 plan of Chicago, an early attempt to map race, traffic flow diagrams, chloropleths, and circle diagrams. A tale of the ideological and rhetorical power of these images is told through major figures and sites, which are taken to be either formative or representative: Olmsted, Jr., and Pittsburgh, John Nolen and Flint, Arthur Comey and Houston, and Clarence Stein and Radburn. Other figures who studied and disseminated images play a central role as well: Clarence Perry, Willard Cope Brinton, Hegemann and Peets, Otto Neurath, Ludwig Hilberseimer, Kevin Lynch, Edmund Bacon, Gordon Cullen, Ian McHarg, Christopher Alexander, and Allan B. Jacobs. The more anonymous planners who toiled in New Deal agencies, municipal planning authorities, and at world's fairs also play a role. In the end, this imagery reveals how planners have reconciled technical necessities with artful prerogatives, ideological compulsions, and a range of other subjective issues. Where this historical sketch necessarily leaves much of the canvas blank, I hope that it will encourage others to fill it in.

Mastering the Plan

By the time that modern planning arose in the early twentieth century, cartographers and geographers had worked out an array of techniques for displaying information graphically. Much of this was based on cartography itself. The earliest maps of the young American republic were enmeshed in political and administrative boundaries, settlement patterns, exploitation of land and resources, and transportation systems, much of it in the service of the nation. In other words, mapping and proto-planning evolved together and once planning began to come of age, it could turn to a mature and sophisticated tradition of cartography and visual information. Commercial, military, disease, and tourist maps like Baedeker's guides, real estate atlases, and government maps for the Bureau of Statistics, for instance, all advanced visual techniques for displaying information.

When Daniel H. Burnham and Edward H. Bennett published their plan of Chicago in 1909, coding by color, texture, and pattern had been well explored, and the more diagrammatic experiments of cartographers like Francis Amasa Walker or lithographer Julius Bien had been a generation in the making.³ Planners could thus look to nineteenth-century isothermal diagrams of rainfall, ethnographic charts, and maps of land classification to express bands or areas with shared characteristics of any sort.

Planners quickly developed these and other cartographic techniques for their own purposes. The work of the first self-conscious city planners was widely disseminated at rapid pace. Camillo Sitte's *City Planning According to Artistic Principles* (1889), Ebenezer Howard's *To-Morrow* (1898, published in 1902 as *Garden Cities of To-Morrow*), *Der Städtebau Monatsschrift* (beginning 1904), Raymond Unwin's *Town Planning in Practice* (1909), or the work of Frederick Law Olmsted and his firm were all filled with vivid graphics, long before the City Scientific chastened the City Beautiful.⁴ Images and techniques of image-making circulated widely in these early efforts. By World War I, dozens of publications on planning would reach the Anglo-American audience. These sources conventionalized planning, creating a shared corpus of examples, methods, and images. In short, cartography had conquered statistics and planners reaped the reward.⁵

More work is needed on what nineteenth-century cartographic innovations and archaeology bequeathed to twentieth-century urban planning—and, vitally, the ways in which that bequest came freighted with cultural baggage. Both cartography and archaeology assimilated masses of crude data

into arresting images. Urban planning evolved alongside reconstructions of ancient cities, which planners used in their publications side by side with charts of present conditions. What did planning learn about the possibilities of future cities from the example of exhumed strata from the past?⁶

Some of these ideas converged at the White City at the World Columbian Exposition in 1893. Chicago's fair influenced a generation of cities and informed the first comprehensive plans in Washington, DC (1902), Cleveland (1903), St. Paul (1903), and San Francisco (1905), as well as Philadelphia's parkway (1902) and Burnham and Bennett's plan of Chicago of 1909. These plans benefited from changes in architectural education. Architects, now trained in the French manner at the École des Beaux-Arts, came to value the broad axes, hierarchical arrangement, public spaces anchored by monuments, and tight compositions and rational order favored by this school—a decisive departure from Sittean aesthetics. Yet, like the archaeologists, they were steeped in precedents going back to Greece.

More importantly, Beaux-Arts-trained architects returned from France with the ability to make grand presentation drawings that doubled as forms of persuasion.⁷ The dry plans of the nineteenth century quickly gave way to decorative geometries and *poché*, bold urban gestures, and exquisite order. Although the planning of the first decade or so of the century is called the City Beautiful, it reflects the rationality of Beaux-Arts training. Ideal or bird's-eye views and partial prospects of grand avenues, parks, or civic centers proliferated.⁸ These were sometimes painted by leading artists or engraved for wide dissemination, including as exhibits at museums, further proof of their artful nature.⁹ Planners quickly grasped the need for two layers of representation: technical plans for official purposes and more promotional imagery that could sway the public.

Jules Guerin's sublime paintings for the 1909 Plan of Chicago matched Daniel Burnham's bombast. Far more ambitious than any previous American effort, the so-called Burnham Plan was equal parts manifesto, history, primer, and plan. Text and image work together with special force. Chicago's park area had become grossly inadequate. We learn that "Chicago has now dropped to the seventh place in so far as park area is concerned, and when the relative density of population is taken into consideration this city occupies the thirty-second place!"¹⁰ Statistics give way to alarm. With a turn of the page, the book channeled the emotional impact of that exclamation point into a bold two-page spread, an image of the proposed green belt and park system—a pictorial release of the tension built up by the text that exactly parallels the way green space would relieve the urban density. The book itself was understood as a visual technique, part of an argument both visual and textual.

Guerin's views, even in their drastically reduced state, are nearly cosmically charged. In their chromatic harmony and repetition of effects, they lent coherence and unity to immense scales of physical, if not temporal, change. They also aestheticized that change, which, given the anxiety associated with change itself, was a savvy strategy. Even more to the point, the same color scheme Guerin introduced in his views infiltrated Burnham and Bennett's diagrams: lime greens, softened orange-reds over a wash of pale yellow with crepuscular purples, both in line and wash. The effect culminates with a series of two-page plates in the middle of the volume. Here a dark figure-ground plan of the streets and park system in black and white (Plate LXXXV) gives way to the same plan with Guerinesque colors over a white background showing the boulevard system (Plate LXXXVI). The next page delivered a revelation: a breathtaking view by Guerin (Plate LXXXVII). In his "View looking west over the city," the perspective tilts from plan to ideal view at dusk. A dramatic horizon of hot orange replaces the blood orange arterial road and gives the city its unbounded edge: effulgent nature overtakes the urban fabric; the parks and the plan in general have reconciled nature and the city as the text promised.¹¹

The Chicago Plan was an outlier in its own era. Few cities had the resources to commission such a lavish document. But more modest plans could be visually innovative, in particular early attempts to use maps analytically. Frederick Law Olmsted, Jr.'s 1910 street plan for Pittsburgh was particularly influential (Figure 1). The "General Map of the Pittsburgh District" represents population with



Figure 1. General map of the Pittsburgh district, 1910. F. Olmsted, Jr., *Pittsburgh: Main Thoroughfares and the Down Town District* (Pittsburgh: Pittsburgh Civic Commission, 1911), xvi. In mapping the urban datum and eliding standard features like buildings and streets, Olmsted, Jr., turns the map halfway into a diagram.

concentrations of dots. This was typical enough, but Olmsted layered that onto manufacturing, railroad property, major slopes, and parks and cemeteries using patterns and tones—a chloropleth or statistical map rather than a strictly geographical one. Urban planning maps tended to show city blocks, major buildings or institutions, and road networks, in short, the built environment; Olmsted's surveyed the urban datum.

The elision of these major features turns the map halfway into a diagram. With such strict limits on what it analyzed, its pictorial nature advances. Sometime between his work on New Haven with Cass Gilbert in 1910, which straddles the City Beautiful and City Functional movements, and his plan for Pittsburgh, Olmsted had learned how to assimilate data into maps rather than segregate it in ageographical charts and graphs.¹² Soon such analytical maps would become common. In a 1913 plan for Houston, Arthur Coleman Comey mapped private property onto race and land use (Figure 2).¹³ Such triangulation condensed into a single image everything developers and the Federal Housing Administration and the Home Owners' Loan Corporation would later need to advance the system of redlining. Progressive Era measurement and representation could later become the unexpected enabler of systematic segregation, disciplined by the authority of the map.

Scientific Persuasion

By the teens, many of the strategies for displaying information graphically had become common knowledge. Planners could turn to the work of Willard Cope Brinton, the Edward Tufte of the early twentieth century.¹⁴ His *Graphic Methods for Presenting Facts* (1914) exhaustively catalogued graphic techniques. He collected and worked out the best ways to create graphs, charts, diagrams, maps, and graphic expressions of temporal and spatial change. He had, furthermore, begun to show how to incorporate images into technical diagrams, both to serve the statistical point and to ornament it. Shading, hatching, patterning, population isotopes, traffic density, and direction diagrams became conventionalized. More than compendia, Brinton's work gave no-nonsense criticism of various methods and simple instructions for how to make diagrams and maps. His graphic methods were



Figure 2. Analytical map of Houston, 1913. Comey, Houston: Tentative Plans for Its Development (Boston, MA: George H. Ellis, 1913), 17. Perhaps the first urban plan to map race.

part of the rise of Taylorism and Scientific Management, bureaucracy, and the move toward standardization. A small cottage industry on the visual display of information emerged in the 1920s with increasingly complex and diverse images appearing in books and magazines like *Survey Graphic*. Planners moved in this world in the years surrounding World War I. Graphics like those in Brinton's book helped them give vivid pictorial form to the statistical surveys that now bolstered nearly every urban plan.

As the City Beautiful gave way to the City Functional or Scientific, an era of statistically dense master plans emerged—the tomes that Hudnut maligned. These plans, by the first generation of professional planners such as John Nolen, Harland Bartholomew, and Frederick Law Olmsted, Jr., settled on a set of visual conventions that dominated planning before World War II and continue to be important to the field. One of the most intriguing is the quarter- or half-mile circle diagram (Figure 3). Popularized by Clarence Perry, Clarence Stein, and others in the 1920s, they were common enough before then in American and European planning—and mapping—to be called a convention. They show variously the distance from the urban center, the "pedestrian shed," or access to institutions and amenities. Perry's use of a one-quarter mile radius in the 1929 Regional Plan of New York has been called "the best-known urban planning diagram of all time."¹⁵

But the aesthetic and ideological consequences of circle diagrams remain unexamined. They usually ignore geographical features and, more importantly, urban realities by superimposing a platonic image over an area that is neither shaped nor conceived of as a circle. The circle recalls the history of utopian plans such as Howard's Garden City diagrams, if not Renaissance ideal cities. The 1920 plan of Flint, Michigan, makes this explicit, if subtly so, by the way that the main arterial roads lead to smaller towns that begin to look like the satellite cities (Figure 3).¹⁶ We thus have



Figure 3. Circle diagram of Flint, MI, 1920. Nolen and Arnold, *The City Plan of Flint, Michigan* (Flint, MI: The City Planning Board, 1920), 5. The diagram inserts Flint into a near Garden City abstraction, diminishing Detroit and aggrandizing Flint just as the automobile was dramatically altering the fates of both cities.

reality bending to the abstraction of a powerful urban planning diagram and ideology. A second powerful consequence: radiating waves of urban energy emanate from Flint. The image reinforces a center–periphery relationship, when Detroit, a much larger city, is on the deepest periphery of this map. The image diminishes Detroit and aggrandizes Flint just as the automobile was dramatically altering the fates of both cities.

Circle diagrams are analytical, but their interest lies in their ambiguity, in the idea that they do more than measure. At Radburn, for example, Clarence Stein and his collaborators used half-mile and mile circle diagrams. In some of these images, the circle floats free of discernible measurement. Here it is more like a moral boundary, a way of describing what lies within the collective that is a town and, importantly, what does not. The circle, after all, is an ideal form, an abstraction free of



Figure 4. Traffic flow diagram for Peoria, IL, 1937. Harland Bartholomew and Associates, *A Comprehensive City Plan, Peoria, Illinois* (Peoria: Greater Peoria Civic Association, 1937), plate 19. Such diagrams can make compelling arguments for decentralization and highway building programs.

on-the-ground considerations. It is also a frame and like any picture frame it includes and excludes, imposes order, and superimposes the universal language of geometry over the local, changeful, and contingent reality of a particular city or place.¹⁷

Another unexamined graphic technique is the traffic flow diagram (Figure 4). Olmsted, Jr., used simple ones in some of his earliest plans, but as a mapping technique, it dates back at least to Charles Joseph Menard's 1869 diagram of Napoleon's Russian Campaign. Menard tidily collapsed movement, weather conditions, and attrition in place and time—a terrific model for charting urban traffic. The best of these diagrams gave a palpable sense of traffic choking the core of the city or diminishing to slender tendrils in the deepest suburbs. They mapped the modern phenomenon of the commute and did so not just as a measure of traffic on a map, but also to give it the figurative power to overtake cities. With the same cool rationality of Menard's chart of a catastrophic campaign, a



Figure 5. Elbert Peets, perspectival figure-ground, 1921. W. Hegemann and E. Peets, *The American Vitruvius: An Architects' Handbook of Civic Art* (New York: Architectural Book, 1922), 77. Peets attempted to achieve the reductive clarity of the figure ground and the revelatory impact of the aerial perspective in one drawing.

planner could diagram urban defeat at the hands of the car or crowd—or the opposite: orderly flow. What else did planning unwittingly inherit from military mapping?

Street sections, figure-ground diagrams, organization charts, traffic flow diagrams, circle maps, and the very symbols, colors, patterns, and textures that fill the normative maps of urban planning all are sorely neglected. All are packed with meaning that will enrich the history of American urbanism, if not challenge some of the assumptions of the field. If visual conventions, like verbal clichés, take hold based on tacit agreements or assumptions, historians can unpack those assumptions from the history of planning imagery.

To take one example, the widely varying coding in planning maps raises the point that planners resisted the graphic standards that arose in cartography in the nineteenth century and in architecture early in the twentieth century.¹⁸ The absence is notable because architecture's standards align with the larger American interest in establishing standard weights and measures in the period. Planners, who were closer to the bureaucracies of management than architects, oddly never mobilized universal graphics. Recent attempts to do so reveal just how long it has taken the profession to conventionalize its graphic language fully.¹⁹ More research is needed to discover whether the absence of formalized standards should to be taken as a kind of failure or as a form of resistance that allowed planners a wider scope of expression.

Many of these techniques can be found nonetheless in books like Hegemann and Peets's *The American Vitruvius* (1922).²⁰ A magnum opus of urban design, it was the first to elevate visual above textual argument. Like a splendidly illustrated almanac, it is at once a treatise, polemic, and visual menagerie for architect planners to plunder. This type of book reveals an overwhelmingly aesthetic view of the city. In its visual complexity, it approximates its subject matter: it is the city manqué, full of the utopian promise and improvised chaos characteristic of American cities. Once again, the visual culture of planning is palpable, in other words, at the scale of the book. For a field that usually sees its work completed only in fragments, the book is an optimistic proxy.

Hegemann and Peets advanced the tradition of Camillo Sitte (Figure 5). They paired clusters of Sitte's figure-ground diagrams with larger photographs or drawings of monuments or plazas. The analytical abstraction of the *poché* becomes fleshy reality and the reader can move freely between thinking about urban space, morphology, and architectural form. Peets clearly longed to express both together: his own "visualization" of Blondel's plan for Strasbourg combines a Sittean figure-ground with an idealized view from above that gives vertical expression to the figure-ground diagram.

Another landmark publication of the period, the multivolume Regional Plan of New York was graphically more culmination than innovation.²¹ Aside from Perry's neighborhood unit, its many

volumes failed to produce a single forceful icon. Nonetheless, its hundreds of images together are a kind of encyclopedia of visual techniques, from paintings by Jules Guerin to its hundreds of more arid technical diagrams. More novel is the way the plan operated at multiple scales. As a regional plan, it modeled how to think of a city in the larger context of secondary urban nuclei and its suburban and rural hinterlands. At the same time, it popularized the neighborhood unit concept, which broke down the task of planning massive cities into its atomic minimum. Perry's enduring diagrams for neighborhood units gave pictorial form to the organic metaphor so prevalent in planning at the time.

Public Visions, Postwar Plans

Yet the 1929 Regional Plan of New York was also the end of an era. Soon the Depression would spawn the abecedarian agencies of the New Deal that would transform the profession, among them the Works Progress Administration, Public Works Administration, National Resources Planning Board, and Tennessee Valley Authority. They brought planners of all stripes together to work on tangible projects and forged new alliances between the profession and government, business, and the academy. With the economic emergency forcing action, these agencies experimented widely with new modes of describing urban phenomena and making graphic arguments accessible to the professional and lay audience alike.²² Willard Brinton's work from the period demonstrates the change.²³ Brinton incorporated a range of newer techniques, including Isotypes (ideograms), relationship charts, flow charts, and "quantitative cartoons" that had become standard in business and planning. Some of these he had borrowed from the New York Regional Plan Commission and New Deal planning organizations. Hereafter, the worlds of graphic information and planning were intimately connected. The story could also be told through publications like Survey, later Survey Graphic, whose diagrams and maps were part of the aestheticization of technocracy and social critique. Soon Fortune would adopt similar graphics and present them to a decidedly different readership.

Indeed, the 1930s and 1940s were a golden age of experimentation in visual strategies in planning. Alongside the New Deal and intersecting with it, Jacob L. Moreno's Sociograms had their first practical experiment, Otto Neurath's Isotypes became ubiquitous, and Le Corbusier and Frank Lloyd Wright's ideas on urbanism were widely discussed.²⁴ Much of the imagery that emerged in these years attempted to discover a universal language for planning, in part to stimulate citizen participation. Dozens of books on the subject appeared during the war alone, in scholarly, professional, and popular form.

Americans also encountered vivid visual polemics about cities at the world's fairs of the 1930s. At the 1939 New York World's Fair, the nature of America's future was fought out through urban planning schemes, including Henry Dreyfus's Democracity, a model of a decentralized worker's utopia—inside the theme building no less! For General Motors's Futurama, Norman Bel Geddes's office created a model with several million structures to help people visualize the city of 1960. Fairgoers could take the measure of these farsighted utopian plans against Mumford's "The City," a film that proposed a future that was nearly in existence in the Resettlement Administration's green towns of the mid-1930s. Here were three alternative visions of the future city by two industrial designers and a social critic. Both Bel Geddes and Dreyfus subverted the peephole effect of the traditional diorama. They engaged the viewer bodily in a multisensorial experience of high drama, including lighting effects, film, smoke, and movement. These sublime, propagandistic exhibits led directly to theme park rides like Pirates of the Caribbean.²⁵ They also brought serious progressive planning before the public with cutting-edge exhibition strategies, including the sort of propagandistic film that would soon become a staple of the wartime cinema experience. How could maps and diagrams compete with this?



Figure 6. Diagram, San Francisco City Planning Commission, *Master Plan Primer* (San Francisco, NC: The Commission, 1945), 2. Such cartoonish images, meant for public rather than professional consumption, belie the complexity of ideas, if not ideological content, behind them.

One way is that World War II would put maps before the American public like never before.²⁶ The home front's cartographic awareness paralleled its intensified engagement with urban planning. Magazines and newspapers commissioned maps and diagrams by the thousands. Advertisements that forecasted the city of the future ran in *Saturday Evening Post* and other magazines. Pamphlets associated with advertisements by Revere Copper and Brass, including a primer on citizen involvement in urban planning by Louis Kahn and Oscar Stonorov, were widely disseminated. Stonorov claimed that the company circulated as many as 100,000 copies of *You and Your Neighborhood*.²⁷ Planning had become a populist venture. Alongside technical master plans, cities published popular pamphlets to help engage citizens in the planning process. The San Francisco Planning Commission started a cheap, popular news bulletin. Its *Master Plan Primer* of 1945 presented cartoon-like Isotypes and diagrams drawn by graphic designers (Figure 6).



Figure 7. Diagram of the proposed replanning of Chicago, 1940. L. Hilberseimer, *The New City: Principles of Planning* (Chicago: Paul Theobald, 1944), 143. An abstraction that pretended to be data-driven, it presented order and control in a moment in which neither existed.

Paradoxically, the same moment that sponsored specific plans for reconstruction to stave off a return to depression also searched for universals through abstract diagrams (Figure 7). Some of these masquerade as data sets, but they are every bit as complicated as the abstract painting then coming into vogue and which surely influenced their imagery.²⁸ Ludwig Hilberseimer, in his book *The New* City (1944), imagined replanning Chicago based on wind studies. Elbert Peets, who admitted that he could not follow some of Hilberseimer's "esoteric excursions," nonetheless complimented him on his "delightful" images.²⁹ Peets, however, had a more practical reason for his query: "I want to ask by what means one can determine what are or will be the actual movements of smoke. I have in the past despaired of getting accurate data and of determining (upon such data) planning measures which would justify town plans having precision of purpose and accomplishment—as do your charming designs."³⁰ Peets informed Hilberseimer that the United States Housing Authority (USHA) had once required wind diagrams but discontinued the requirement because "windroses proved to have no reliability." Architects, he added, often borrowed data from a nearby city and inserted "a mere arrow." "May I ask," he finished, "what wind-data your plans are based upon?"31 Hilberseimer could only acknowledge that "it is very difficult to get the information on prevailing winds."32 He had fudged it; no real data lay beneath his diagram. The elegance and purity of his abstraction had probably tipped off the superbly genteel Peets. And so should similar abstractions trigger planning historians. This is not to denigrate the images. Abstractions like Hilberseimer's play with time and space; they canvass for a seductive future and soften the losses of wholesale erasure. In short, they do work that more rigorously data-driven images might not be able to do.



Figure 8. Diagram of the visual form of Boston as seen in the field. K. Lynch, *The Image of the City* (Cambridge, MA: MIT Press, 1960), 19. Urban experience based in rough social science methods finds its first cartographer.

Diagramming Urban Experience

A second golden age of representation in planning arrived in the 1960s with initiatives like the Model Cities Program, the U.S. Department of Housing and Urban Development, urban renewal, and area transportation studies, all backed by strong eminent domain practices. Systems theory, information science, and the early use of computers propagated wholly new techniques for imagining cities. At the same time, urban design came of age and sponsored an array of formal approaches, while more socially engaged planners advocated for citizen participation.

In *Image of the City*, Kevin Lynch's focus on urban legibility set up expectations about the "imageability" of the built environment.³³ He coupled this with an interest in individual mental maps and semiotics to deduce a series of purportedly universal elements (path, edge, district, node, and landmark) that would make it possible to collapse urban experience into simple diagrams (Figure 8). In a field now long habituated to seeing patterns and textures as demographic or statistical—that is to say, legible as quantitative information—his maps were a major departure into more purely formal ways of imagining the city. The Situationists aside, urban phenomenology had found its first cartographer. Along with the smaller diagrams that sat in the margins like cartoon-like glosses on the text, Lynch's graphics would play an important role in the field.³⁴ In *The View from the Road* (1964), Lynch, along with Donald Appleyard and John R. Myer, produced one of the most ambitious, if confusing, attempts to create a graphic language to express the experience of moving through cities.³⁵

Christopher Alexander's diagrams of form and movement in space, which he bolstered with mathematical formulas, could deliver a similar effect. Unlike Lynch's work, they usually require text to be understood and few of them have cartographic intentions.³⁶ Instead, throughout his career,



Figure 9. Diagram of movement toward the Piazza del Popolo, Rome. E. Bacon, *Design of Cities* (New York: The Viking Press, 1967), 139. An exquisite reduction of a fragment of Rome, the map becomes a diagram that clears out the experiential maelstrom of urban experience. It could make a powerful argument for such diagrammatic simplicity in postwar urban design.

Alexander has parsed urban phenomena, invented graphic languages to describe them, and proposed urban solutions through an art of combination.

Edmund Bacon, by contrast, created a severely reductive notation for analyzing urban relationships. In *The Design of Cities*, Bacon elaborated on the figure-ground diagram. He flipped the ground from black to white and introduced limited color to pluck out major routes, monuments, and spaces³⁷ (Figure 9). In the sparest of these diagrams, the only things left are a few yellow lines drawn between red or blue *poché*. The rest dissolves into the white of the page. Seen next to the intensely lined engravings that fill his book, they can be understood, perhaps uncharitably, as the graphic equivalent to the urban erasure that he oversaw in Philadelphia. The result melded two of the most compelling and sustained traditions in planning imagery: ageographical abstractions and analytical maps. He applied the method both to the study of canonical examples from the past such as Beijing and Rome and as an urban design strategy for the contemporary city. The graphics, along with the book, became standard fare in architecture and planning programs for at least a generation. Venturi, Scott-Brown, and Izenour's diagrams of Las Vegas learned from them.³⁸ Bacon's images continue to be used today.

Arguably of greater importance to planners is Gordon Cullen's concept of "serial vision"³⁹ (Figure 10). To Cullen, the city was experienced as a "sequence of revelations" produced by "sudden contrasts" between buildings and spaces.⁴⁰ This he showed through a series of sketches, each tagged to a different spot on a plan. The method accounts for movement, change of perspective, and the ways in which buildings impinge on spaces and vice versa. Serial vision became a method for urban designers to envision and describe the unfolding *experience* of cities. Cullen wrote of capturing the "sparkle and movement of the day," the "impressions and sensations" of daily life.⁴¹ His designs for New Marlow demonstrate serial vision, replete with the sorts of sharp contrasts that would, as he put



Figure 10. Serial vision. G. Cullen, *Townscape* (New York: Reinhold, 1961), 17. Cullen used a decidedly picturesque and cinematic approach to string together visual experiences that he likened to epiphanies.

it, be "like nudging a man who is going to sleep in church."⁴² Urban design could inspire secular epiphanies. Lynch, Alexander, Bacon, and Cullen were all engaged with understanding and charting urban experience and deriving a positive method of urban design from it. These concerns and methods became widespread among planners.

In a different register, Ian McHarg's "slope maps" or sections in *Design with Nature* (1969) offered an analytical tool for planners to study the relationship of cities to their hinterlands. He was not the first to diagram this relationship—Patrick Geddes's valley section came earlier—but his work met fertile ground in a profession increasingly concerned with sprawl and the environmental impact of cities.⁴³ McHarg charted nature against the city in "physiographic sections." Perhaps his greatest visual innovation was to key these on a single page to analytical landscape perspectives (Figure 11). Here was a method that any keen observer with modest artistic talent could adopt by going into the field with paper, pencil, and watercolor or crayon. McHarg's work highlights the importance of the sketch for urban design in the 1960s and 1970s. Vivid examples of the influence of



Figure 11. Section of the Great Valley. I. McHarg, *Garden City* (New York: Natural History Press, 1969), 148. The section rose to prominence in an era of environmental awareness.

this method can be found in the San Francisco Urban Design Plan of 1970. Andreas Duany's "transects" extend the tradition to the present day.⁴⁴

Whereas the section in architecture is usually a vertical, measured cut keyed to tectonics—what makes a building stand up—and, more pictorially, to bodily experience, the urban section is a horizontal spread, often less strictly mathematical and certainly not structural, that reveals relationships, flows, and contrasts at the scale of the land. Both can be instruments of narrative and explorations of what Barbara Stafford calls "hidden terrains."⁴⁵ Just as graphic sections emerged in the eighteenth century to reveal the insides of bodies, mountains, or ruins, which Stafford links to the tradition of rational philosophy, so have planners carried on this Enlightenment tradition with their section. The history of planning imagery would likewise show how planners reveal the hidden terrains of the city: its demographic data, infrastructure, the relationships between bodies, buildings, spaces, and transportation; and the raw experience of movement and interaction.



Figure 12. Allan B. Jacobs, *Desk Blotter* (1971). Courtesy: Environmental Design Archives, University of California, Berkeley. Where else but in San Francisco?

In the last decades of the twentieth century, the computer became a dominant force in planning and to write about the changes it has ushered in would require a separate monograph. With one tool, planners can crunch and display data, albeit bounded, conventionalized, and regularized by the limitations of software. As planning converges with computer science and planners write code, some of these limitations dissolve. Whether their aesthetic sensibilities follow those of Apple, Google, or Microsoft—and whatever takes their place—will determine a good deal of the future of planning imagery. When tied to Geographic Information System (GIS) and other data-gathering methods, the computer becomes a tool of parametric manipulation. Soon three-dimensional drawing chambers now being worked out for architecture will allow planners to visualize the city with the illusionism of IMAX films but in real time. Whether or not this is a revolution in representation and perception on the scale of Renaissance perspective remains to be seen.

As planners have hitched their fate to computers and created ever more complicated diagrams for cities, a reaction against computer-driven design can be found, for instance, in the diagrams of Leon Krier and New Urbanists. Duany, Plater-Zyberk, and Aminana's *The New Civic Art* (2003) returns to Hegemann and Peets's *The New Vitruvius*. It is, like its model, a guide, compendium, casual history, and manifesto. The graphic techniques worked out over the last century continue to be useful and inspiring. One wonders if books like this are more useful than graphic standards because they put on

display the variety of visual strategies planners have used throughout history and maintain an artful domain in a profession increasingly dominated by policy and data.

Charting a Course for Future Scholarship

A fully fleshed out study of the visual culture of American planning would go well beyond this essay, not just in content, but also in its conceptual ambitions. It would trace out the origins and routes of transmission and conventionalization of the central graphic strategies. It would acknowledge the invisible hands who drew the diagrams and maps—planning's equivalent to architecture's anonymous draftsmen—with an understanding of the materials, technologies, and working methods they used. And it would interweave this history with the planning pedagogy that disseminated and elaborated planning's visual culture. It would, furthermore, couch the images more fully in the context of their making and analyze them in the context of their beholders. It would propose a relationship between imagery and knowledge, image-making and communication, visuality and the three-dimensional realities of the city. In short, it would do for planning what Barbara Stafford has done for the imagery of Enlightenment science, Susan Schulten has done for American geography, and J.B. Harley, Denis Cosgrove, and others have done for cartography.⁴⁶

A visual culture of planning would also consider other classes of images that show the working methods and not just the end results of the planning process, such as Allan B. Jacobs's desk blotters from the 1970s when he headed the San Francisco Department of City Planning (Figure 12). This one shows the doodles of a professional planner at work before e-mail, when business was done by phone and the planner was free to extemporize visually. Improvised over a five-month period in 1971, it shows him mulling over the issues that crossed his desk: landmarks legislation, redevelopment, budgets, site planning, various sites in the city, staff turnover, and his academic future. Given these concerns, no wonder "urban design" is written backward! As images, the blotters reveal how local the visual culture of planning could be, even as worldly concerns invade the drawing. With the same markers that colored the official plans of his department, Jacobs filtered the demands of his office through the psychedelic aesthetic of Haight-Ashbury and album covers of the period. Could it have been drawn anywhere else? In spite of the greatest efforts to subject planning to rational control or to make it universal, it is the fallible, creative human hand that moves the pieces on the urban chessboard. And this is what the artfully ordered imagery of planning has been telling us all along.

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