

Inhabiting the In-between: architecture and infrastructure intertwined

Phoebe Crisman

A site out of mind is familiar territory to many city residents, but unseen and uninhabited in significant ways. These edges and leftover spaces, where urban and architectural scales and uses collide or social and economic divisions are manifest, are rarely considered worthy of design attention. Ugly, ordinary and out of the way, they present difficult existing conditions and unglamorous realities. Of the many types of sites out of mind, perhaps most challenging are the linear cuts incised through the morphological continuity of the city by railway and highway construction. Produced by changes in the technologies and cultures of mobility, this condition is found within dense North American cities largely developed before extensive 1950's highway construction. The resulting interstice, "a space that intervenes between one thing and another,"¹ often generates seemingly uninhabitable zones and problematic discontinuities in the physical and social fabric. Yet these sites may also be understood as fortuitous seams that offer "found" land in apparently built-out urban areas, thereby reducing rural development pressures and increasing public engagement through greater physical density and design. Reconceptualization and inhabitation of these "compromised" sites with dense and sustainable urban infill is a potent alternative to greenfield development and sprawl. The air rights above and the leftover spaces beneath and along elevated highways, rail lines and other immense infrastructural elements are particularly compelling conditions through which to question contemporary conceptions of the public realm. How can publicness be constructed on a site that has yet to exist or exists in a marginalized space, literally in the margins, of high-speed movement? Highway air rights discussions often search for all-purpose "solutions" to the difficulties and opportunities of inhabiting these locations, but there is nothing generic about such conditions. Each (non)site has a history and specific characteristics that must be examined and understood during the design process. There are general principles, but these should be carefully articulated in flexible ways. **EXPAND FURTHER?**

This essay focuses on three projects by Crisman+Petrus Architects that explore how one might construct a public realm on leftover linear transportation spaces. These speculative projects are all located above, beneath and along the two major

highways that bisect Boston—I-95 and the Massachusetts Turnpike (fig. _).² Part of a sustained investigation over several years, the serial nature of the process was a way to examine the particularities of seemingly similar conditions, rather than relying on generalities. While focusing on physical form, this essay addresses a range of important factors in the design process, such as land value, social justice and environmental quality. This project argues that design can positively influence those parallel issues, in other words, that aesthetic considerations can beneficially intertwine with social, environmental, political and economic concerns. For example, the Olympic Sculpture Park by Weiss Manfredi Architects demonstrates how aesthetic, environmental and ethical decisions reinforce each other in the design of a complex architecture / infrastructure project. **EXPAND** Their (un)common nature, pervasive but atypical, requires an investigation of formal and programmatic typologies that combine public space and architectural density in innovative ways.

A Brief History of Air Rights

How can the presence of dynamic movement lines become a positive force in United States cities? This question was examined in the 1960's, when a brief and intense interest in "Joint Transportation Development" was spurred by 1961 Federal Highway legislation that legally sanctioned airspace use above and beneath federal highways for the first time.³ Many design proposals, government studies and Federal Highway Administration publications, such as *A Book About Space*, promoted the concept with the following lofty language.

Where is to be found the answer to the troubling space problems of our cities and their citizens?

It is being found

...above, below, and around the urban highways we are building today

...and those we must plan for tomorrow

...in the farsighted, imaginative use of what was once called 'waste space' in our cities

...in the willingness and ability of urban planners, highway builders, community leaders and private talents to cooperate in the wise development of multiple uses for America's untapped urban space potential.

Highway developers and urban planners call these answers 'Joint Development'

...the planned use of land and space for more than one purpose.⁴

That 1968 report stated the objective of Joint Highway Development as "a higher measure of compatibility between the highway facility and its environment. This attainment may be measured in terms of savings and replacements as to land, money, public facilities, time, land uses or in terms of area improvements to be made at the opportune time of highway construction."⁵ Although one must question the seemingly benevolent nature of this government initiative, designers of the time were intrigued with conditions created by highway insertions within the city. Landscape Architect Lawrence Halprin's 1966 book, *Freeways*, proposed compelling sectional designs for highway "condensation." A "one up one down section," a local road at grade with one direction depressed and another elevated, is an example of his interlocked and incremental "traffic architecture" (fig. _).⁶

Highway megastructures were also designed as a means of urban renewal.⁷ Paul Rudolph's Lower Manhattan Expressway proposal entitled *City Corridor* used a planned cross-town highway and rapid rail spine to structure a massive architectural project (fig. _). Rudolph's accompanying text stated, "Out of these investigations comes the implicit suggestion that urban thoroughways and city transportation systems of all kinds should be recognized as a major generator of urban form, as meaningful—even fundamental—elements in urban design."⁸ Rudolph understood a transportation corridor as "a continuous volume of space in which the transportation system is but one potential and appropriate element."⁹ This understanding guided his sectionally complex sequence of interwoven architectural programs and forms related to specific conditions along the length of the highway. For example, the section parallel to Soho matched the height of that district, while the project dramatically increased in height to form an immense urban gateway at the Williamsburg Bridge. Perhaps fortunately the Lower Manhattan Expressway was not built, but the complete synthesis between architecture, urban form and transportation infrastructure is compelling nonetheless.

Early twentieth century, European and American urbanists also envisioned interwoven architecture and transportation infrastructure, in linear cities such as Edgar Chambless' 1910 *Roadtown* and Le Corbusier's 1931 Fort l'Empereur project, Hugh Ferriss' optimistic combination of technology and colossal forms in *Metropolis of Tomorrow*, and the circulatory complexity of New York's Grand Central Station. The Italian Futurist Sant'Elia arrayed a three-dimensional network in and around buildings to

provide "routes for cars, lifts, trains and especially for the transport of energy to suggest rapid and racing movement in the monumental weight of building volumes. Like an abstract latticework, the new network of traffic routes is to lie over the city, land and continent. Architecture becomes a receptacle for movement."¹⁰ Perhaps this paper proposes an inversion of that equation—spaces of movement become a receptacle for architecture. Frequently the urbanists' fascination with transportation infrastructure made buildings and spaces secondary to the means of conducting inhabitants from place to place. As Adolf Rading wrote in 1928, "It seems that we are gradually coming to the point of directing all of these movements, horizontally as well as vertically, into special paths, making them visible and transparent, and of building the large and distinct framework of the city out of them; in comparison, that which we at present call a building is merely something secondary and small, a point of rest, utterly removed from the great construction of movement, yet completely determined by it and incorporated into it."¹¹

Design excluded

Although these complex networks of interwoven architecture and high-speed circulation rarely materialized, the limited-access highway produced inter- and intra-city interstitial voids in ways these visionaries could not have imagined. A chronological examination of Federal highway cross-sections reveals a dramatic increase in right-of-way dimensions and overall space allocations, supposedly in response to increasing safety standards. Inflated highway design criteria changed little when inserted into dense metropolitan conditions. The resulting urban devastation was a shock for President Eisenhower, who upon seeing a 1959 highway construction site in Washington, was surprised to discover that his "national defense highways" extended *into* and even *through* cities—rather than distributing traffic via multiple arterials.¹² Essentially design has been largely excluded from spaces of movement in the United States. A mentality that optimizes speed and vehicular safety rarely considers the qualitative and cultural issues of place, time and human experience. In the essay "Generica," Sanford Kwinter and Daniela Fabricius described the entire American landscape as a product of short-term efficiencies. "What emerges more and more is a developmental ethos that does not hesitate to declare itself a kind of new mathematical sublime: this landscape, with its engineered berms, boxes, piles, glacis, and equipment parks, offers itself as the pure, one-dimensional result of numbers, algorithms, and protocols crunched...elsewhere."¹³ They would argue that no attempt is made to conceive of a public realm (fig.

...). Highways spaces are an extreme case of this mentality, and contemporary cities bear the physical consequences of what Joan Busquets calls the “fatal dualism between infrastructure and architecture.”¹⁴ The emergence of the traffic engineering profession contributed to the increasingly independent, purely functional design of transportation systems. Complex urban issues were optimally “solved” by separate disciplinary specialists. The roles ordinarily filled by planners and traffic engineers are starting to include architects, landscape architects and artists, due to Federal highway legislation such as the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), as well as renewed interest in infrastructural issues by designers. Current restructuring of transportation infrastructure, necessary as a result of post-industrial urban changes and aging highway structures, affords an excellent opportunity to open this inquiry again. Recent rising land values finally make air rights projects economically viable in several US cities. Rather than conceive of infrastructural “non-places”¹⁵ as impossibly difficult, designers must be receptive to these fragmentary, undervalued and environmentally problematic spaces where potentials for the making of the city, architecture and landscape coincide.

Interstices: 3 Projects for Boston

Speculative projects and open competitions provide an excellent opportunity for designers to influence both public policy and civic imagination. In a series of three Boston projects, we designed complex layerings of space, movement, experience and use within interstitial transportation zones. The first two projects operate in an area of numerous edges and voids—a wasteland bordered by the four cities of Boston, Charlestown, Somerville, and Cambridge (fig._). The many river crossings that play a key role in the history and future of the site allow for the linking and layering of architecture, landscape and infrastructure—thereby creating a legible piece of the city where one had not existed. Both projects were designed during construction of the Central Artery Tunnel Project (construction is nearly complete in 2006 after fourteen years of construction) and challenge decisions made and ultimately built.

TALK MORE ABOUT IDEAS GUIDING THESE PROJECTS

1. Charles River Crossing

The underutilized marshaling yard of Boston's North Station provided the first site for an exploration of infrastructural layering. This idea is not new, though most twentieth century transportation systems were designed as autonomous elements separating distinctly zoned uses. For instance, historic precedents may be found in the multi-level Pont de Passy in Paris, the compressed infrastructure of Chicago's riverfront Wacker Drive, and the Brooklyn-Queens Expressway, where vertically stacked traffic lanes culminate in an upper level pedestrian promenade. Another New York example spans the Cross-Bronx Expressway with a series of four apartment towers, Pierluigi Nervi's 1965 three-level bus station, and a subway station beneath the highway. OMA's urban configuration for Eurolille is a more recent project that adopts this layering strategy. New and existing railway stations and tracks, highways and subterranean parking garages interlock with office and residential blocks to artificially create what Koolhaas terms "a culture of congestion—the metropolitan condition of functions interacting to spawn unpredictable new ones." Originally elaborated in *Delirious New York: A Retroactive Manifesto for Manhattan*, this idea relies primarily on programmatic conflict and compression at the architectural and urban scales.¹⁶

The *Charles River Crossing* design bundles dam, rail, road and pedestrian circulation to reduce haphazard river crossings, minimize environmental impact and visually uncover the Charles River. This revealing allows the river to again become central to the four cities that meet at its edge. The existing Charles River Esplanade, a pedestrian circulation system, is extended around the new basin and reclaimed tidal marsh that had been slowly filled over the past two centuries. Restoration of this water body serves three purposes: it defines the East Cambridge edge, ameliorates flooding, and increases available water frontage for public recreational space and architecture. Development areas are strategically inserted between the four cities' urban morphologies and the reconfigured basin. These new insertions are conceived autonomously from one another, allowing for an incremental development of pieces over time. Large program uses such as big box retail and athletic facilities are sandwiched between the elevated highway and submerged rail line. Playing fields are enclosed within the sloping earthen embankment of the highway interchange. The layering strategy is extended to the architectural scale as the raised highway deck becomes the

roof for a relocated North Station rail terminus, which in turn sits atop a new Charles River dam (fig. _). Ultimately, a hybrid of new and existing transportation systems and architectural programs emerges.

2. North Point Intermodal Transport Intersection

Such occasions for formal and programmatic hybridization are frequently found within the vast spaces and crossings of multilevel highway interchanges and railway lines. Even the particular building type, train station as terminus, has been replaced by that of interchange—a place that connotes someplace else in a web of transportation infrastructures within and between cities. For example, many European stations are being reconfigured to respond to these programmatic shifts. Michael Wilford & Partners' Bilbao Transport Interchange project valiantly accommodates the intersection of three rail termini, a bus station, a new subway system and a parking structure, with shops, offices, hotel, post office, housing and a public plaza. As a catalyst for regeneration of the medieval quarter, the project allows three public streets severed by the nineteenth century railway to pass through and reconnect with the contemporary center. Perhaps even more complex is Norman Foster and Partners' proposal for the King's Cross Transport Interchange in London. Multiple new and existing rail lines, the Underground system and the Stanstead Airport link intersect beneath an immense vaulted space. This new interchange organizes a 125-acre site containing two great train stations, a multitude of historic industrial buildings, vast marshalling yards and a proposed central park. The second Boston project again accepts the Central Artery interchange configuration and incorporates the highway into an intermodal transport intersection (fig. _). All circulation modes cross through the new canted surface of the site—a plane raised to match the height of an existing bridge connecting Cambridge to Charlestown, and angled to meet the river edge. Vast parking decks and rail connections are situated beneath the artificial plinth, while residential and commercial activities occur above (fig. _). With the purpose of stemming the flow of cars from the north, the highway enters the enormous parking garage via dedicated ramps, where connections to commuter rail and subway lines are made. This intervention is also a catalyst for regeneration of the marginalized area to the northwest with the creation of new blocks and activities. Buildings are raised above the plinth to allow circulation across this public landscape that continues the esplanade along the Charles River Basin. The scheme appropriates the vague terrain at the meeting of four cities: Boston, Charlestown, Somerville and Cambridge. Rather than colliding or

resolving the four shifted street grids as in the first project, this project makes a fifth zone, asserting the intersection of transportation infrastructure, public open space and political boundaries as a discrete landscape object.

3. *Urban Bridges: density, dwelling + the public realm*

Although spaces of mobility have become a recent focus of architectural investigation, most work excludes that more private element of life: dwelling—an essential component of the public realm. For instance, the 2003 International Architecture Biennale Rotterdam publication, *Mobility: A Room with a View*, considered transportation spaces as “not only space for traffic but also public space, space to spend time in.”¹⁷ This approach challenged the placelessness that French anthropologist Marc Augé described as a “non-place.” Augé argued that increased mobility has led all space to be perceived as a transit zone—a mere interval in our state of continuous movement. These non-places change the way we experience the physical environment and condition our expectations.¹⁸ The Biennale displayed projects primarily generated from the position of the automobile, with the relationship between multiple levels and inhabitants of the city, especially those *at grade*, nearly neglected. By introducing dense mixed uses and plentiful housing into mobility spaces, however, a new ground connection may be activated. Increasing urban housing demand and costly air rights construction require greater density, but more importantly, to generate vital urban life. The crucial linkage between housing typology and urban morphology—the street network and its specific sectional configuration—establishes the formal strategy for the third Boston project (fig. _).

The competition brief asked that entrants devise a dense mixed-use project over a 200' wide linear depression cutting through the city of Boston. An analysis of historic maps reveals that this urban fissure, now occupied by the Massachusetts Turnpike and Amtrak rail lines, has existed since at least the eighteenth century when a fortification crossed the original Neck beneath the competition site (fig. _). Present day Marginal Street runs along that original margin, but few city residents are aware of this history. Nineteenth century railway lines and the twentieth century turnpike followed the same alignment and generated the three distinct districts found today—Bay Village, Chinatown and the South End. This analysis supported the argument that Boston is a geographical palimpsest with a complex history of land creation and layered infrastructure. Proposals commissioned

by the Massachusetts Turnpike Authority¹⁹ and the Boston Redevelopment Authority used a uniform decking strategy to erase an urban edge in existence since Boston's settlement. In comparison, the Urban Bridges project does not attempt to create artificial terra firma, but instead conceptually and structurally bridges between two distinct neighborhoods. Twelve bridge buildings span the Mass Pike cut and are linked by parallel streets, essentially secondary spans between bridge trusses. The turnpike is strategically revealed at the original Neck shorelines—physically manifesting that earlier condition and opening visual connections between the turnpike and city “ground.” Natural light and geographic orientation is provided for turnpike and Amtrak travelers, while the multi-layered site history is revealed to those at all levels and speeds of movement. Related to Carol Burns' description of “constructing the site,”²⁰ this strategy reads the existing layers, surrounding texture and unseen history embedded in the non-existent site.

By making this history visible, focus is redirected from the contemporary “problem” of the infrastructural cut to an understanding of its' lineage as an ever changing marginal space. This insistent urban seam is an excellent example of what Aldo Rossi has described as “the persistence of urban form.”²¹ This edge began as a colonial era fortification, before successively becoming a railway causeway across the Back Bay, a rail line on “solid ground” when the Bay was filled, and finally a concrete channel containing both the Mass Pike and Amtrak lines. Four maps presented at the same scale and overlaid with the current street pattern supports a belief in the necessity for urban edges. Theorists ranging from Kevin Lynch to Linda Pollak have written about the importance of edges. In the essay “Partially Open Space, Boundary Events, and Transitional Objects,” Pollak discusses the negative status of boundary in the modern city and argues for a reconsideration of a boundary's critical power. “Boundaries can function as thresholds as well as barriers, to support and enable difference in social space...Because boundaries are where things meet, they have the potential, when approached and represented from different sides, to function as spaces of debate and ambiguity, where it is possible both to call identities into question and to reveal their interdependence, whether these are identities of subjects or of spaces.”²² The turnpike cut is conceived as a thick edge—a spatially complex and inhabited threshold that bridges and still allows the cut to remain in a transformed state. This strategy accepts that new architecture in this turnpike band cannot be instantly assimilated into adjacent districts, and nor it should. It will remain “another thing” until it is slowly altered

by new built form and human memory.

This thick edge results from a formal and spatial design strategy that integrally conceives of the public realm, urban structure and architectural typology. A series of thin bridge buildings parallel to Washington Street are modeled on the traditional block scale and rowhouse typology of adjacent Bay Village, Chinatown and the South End. The bridges link these neighborhoods, while emphasizing and recalling movement through the Neck on Washington Street. Two city blocks flanking Washington Street are each subdivided into six mixed-use blocks by one new local street at grade and four pedestrian streets above two internal parking levels. These new streets and courts, edged by retail and small-scale commercial uses with residential above, will create active public spaces integral to the city structure.²³ Unlike the commissioned schemes that designed streets scaled to vehicular movement and a singular "Public Square," the *Urban Bridges* project established a taxonomy of street sections linked to diverse public and private activities. Rejecting the equation "green space = public space," the streets themselves are the public space of the city.

The *Urban Bridges* project argues that the street intersection, and hence the street, is the true exemplar of the contemporary urban condition. A product of visions resulting from cultural, industrial, political or electronic revolutions, the city street has reflected and abetted these changes. Once perceived as an integral component of the urban body, the street has been recently criticized as a problematic network that simultaneously connects and undermines public life. The "public space" described as lost by these physical transformations, however, is rarely questioned or sought out in alternative form. Some critics insist that although the street has lost its public significance with the declining importance of physical presence and place, unprecedented contemporary modes of publicness have emerged instead.²⁴ While recent electronic forms of exchange have certainly expanded the range of interactive possibilities, direct bodily interaction is unavoidable until we cease to physically move about the city. This essay posits a reading of the street, and particularly the street intersection as the space in which publicness is forced into action by virtue of the various modes of mobilization (motorized vehicles, bicycles, pedestrians, skateboarders, etc.) that are compelled to coexist and assert their rights, or literally *intersect* there. Public space—the space where human beings speak to each other,

construct society, and engage in debate in which no one can seek the support of an external judge²⁵—comes into being from the absence of a singular power. At this site of intersection the democracy of publicness is played out endlessly as multiple publics encounter, wait for, or challenge one another—a space of *action*.²⁶ The project's carefully configured and intimately scaled series of streets form a rich and varied public realm in which publicness may unfold.

The narrow, serial block structure perpendicular to the turnpike cut is inextricably linked to the housing typology itself. Each block was designed as a structural truss spanning the 200' gap, thereby avoiding the construction of a uniformly heavy concrete deck and its' tabula rasa surface. According to the Boston Redevelopment Authority report, *A Civic Vision for Turnpike Air Rights in Boston*, the cost of building a deck over the Mass Pike “consistently increases with the height of buildings to be supported...In 1999 dollars, these ranges translated into deck costs as low as \$175 to \$225/sf for buildings of five or fewer stories and...as high as \$400 to \$600+/sf for 35-story buildings.”²⁷ Given the direct relationship between deck cost and building height, quality of life considerations, and the intimate scale of surrounding neighborhoods, the mixed use, low and mid-rise buildings balance density and livability. Unlike most highrise buildings, the proposed typology gives residents greater contact with the “ground” and street life, contains diverse uses and live/work opportunities, reduces the number of units that share vertical circulation, and provides each dwelling with light and ventilation from at least two sides. Buildings are aligned along the North-South axis so that all dwelling units receive daily direct sunlight. Green roofs provide a recreational “backyard” for residents, and photovoltaic panels on the upper roofs take advantage of solar income. Ranging from 20' to 50' in width and 6 to 12 stories in height, the blocks provide a range of unit types of varying area, configuration and cost. The lower two floors contain retail, office and community uses with two levels of concealed mid-block parking (fig. ___). This programmatic and spatial layering will establish a vibrant density of people living, working and playing, while balancing communal and private life.

This research began a few years ago with the desire to generate a design primer as an educational device for mayors, planning officials, transportation engineers, architects, developers and citizens. By generating provocative design evidence and translatable strategies, the published results were intended to be a direct impetus for change in the interstitial spaces of

transportation infrastructure. Such a comprehensive and simple primer no longer seems valuable, since it seems unable to address the reality that architecture and cities are inherently site specific. In the end there is nothing generic about these sites. Some were sliced through a dense and continuous urban fabric, such as the Cross Bronx Expressway, and other cuts were always there as found in the Mass Pike research, but whatever the origins the city has developed and changed in response. They each have specific and significant histories that have generated unique characteristics and suggest particular design possibilities. Primary ideas explored, and maybe even principles elucidated in these Boston projects will be useful to consider in the next air rights investigation, but only as ideas—not strategies.

Bibliography

- Arendt, Hannah. *The Human Condition* (Chicago: University of Chicago Press, 1958).
- Augé, Marc. *Non-places. Introduction to an Anthropology of Supermodernity* (London: Verso, 1995).
- Banham, Reyner. *Megastructure: Urban Futures of the Recent Past* (London: Thames and Hudson, 1976).
- Boston Redevelopment Authority. *A Civic Vision for Turnpike Air Rights in Boston* (Boston: BRA, 2000).
- Burns, Carol. "On Site: Architectural Preoccupations," in Andrea Kahn (ed.), *Drawing/Building/Text: Essays in Architectural Theory* (New York: Princeton Architectural Press, 1991): 147 – 167.
- Busquets, Joan. "New Urban Phenomena and a New Type of Urbanistic Project". *Present and Future: Architecture in Cities* (Barcelona: UIA, 1996).
- Crisman, Phoebe. "Interstices: the Architectural Appropriation of Transportation Infrastructure." *Heterotopolis: Immigration, Ethnicity and the American City* (Washington, DC: ACSA Press, 2000).
- Deutsche, Rosalyn. "Art and Public Space: Questions of Democracy," *Social Text* 33 (1992): 51.
- Holl, Stephen. *Anchoring* (New York: Princeton Architectural Press, 1995).
- Houben, Francine and Luisa Maria Calbrese (eds.) *Mobility: A Room with a View* (Rotterdam: Nai Publishers, 2003).
- Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan* (New York: Oxford University Press, 1978).
- Kwinter, Sanford. "Generica." *Mutations* (Barcelona: Actar, 2000).
- Nye, David. *American Technological Sublime* (Cambridge: The MIT Press, 1994).
- Patton, Phil. *Open Road: A Celebration of the American Highway* (New York: Simon and Schuster, 1986).
- Pehnt, Wolfgang. "Always Straight On: The Straight Path in Modern Architecture". *Daidalos* (March 1993).

Perez-Gomez, Alberto. "Spaces In-between." *Present and Futures. Architecture in Cities* (Barcelona: UIA, 1996).

Pollak, Linda. "Partially open spaces, boundary events, and transitional objects." *Appendx: culture, theory, praxis* 4 (1999): 76 – 97.

Real Estate Research Corporation & the Office of Research and Development Bureau of Public Roads. *A Study of Airspace Utilization* (US Department of Transportation, Federal Highway Administration, June 1968).

US Bureau of Roads, Environmental Development Division. *Highway Joint Development and Multiple Use* (US Government Printing Office, 1970).

US Department of Transportation, Federal Highway Administration. *A Book About Space* (US Government Printing Office, 1968).

Rossi, Aldo. *The Architecture of the City* (Cambridge: MIT Press, 1982).

Shane, Grahame. "On Landscape Urbanism." *Harvard Design Magazine* (Fall 2003 / Winter 2004) on-line article.

Wolf, Peter. *The Evolving City: Urban Design Proposals by Ulrich Franzen and Paul Rudolph* (New York: The American Federation of Arts, 1974).

Notes

¹ Interstice is derived from the Latin word *interstitium*: "to stand still or stop in the middle of something." *Webster's Third International Dictionary*, unabridged edition.

² The Boston Society of Architects and the American Institute of Architects sponsored the Designing for Density Competition. The Boston site was 5.9 acres of air rights above the Massachusetts Turnpike between Chinatown and the South End. More information on the competition may be found on the BSA website at <http://www.architects.org>

³ Real Estate Research Corporation & the Office of Research and Development Bureau of Public Roads, *A Study of Airspace Utilization* (US Department of Transportation, Federal Highway Administration, June 1968), p.1.

⁴ US Department of Transportation, Federal Highway Administration, *A Book About Space* (US Government Printing Office, 1968), p.1.

⁵ *Ibid.*, p.2.

⁶ Lawrence Halprin, *Freeways* (New York: Reinhold Publishing, 1966), p.95.

⁷ See Reyner Banham, *Megastructure: Urban Futures of the Recent Past* (London: Thames and Hudson, 1976). It is important to distinguish between a megastructural approach and the strategic project insertions that are discussed later in the paper. Banham cites Ralph Wilcoxon's 1968 definition of megastructure as "not only a structure of great size, but...also a structure which is frequently: 1) constructed of modular units; 2) capable of great or even 'unlimited' extension; 3) a structural framework with smaller structural units; and 4) a structural framework expected to have a useful life much longer than that of the smaller units which it might support", p.8

⁸ Peter Wolf, *The Evolving City: Urban Design Proposals by Ulrich Franzen and Paul Rudolph* (New York: The American Federation of the Arts, 1974), p.52.

⁹ *Ibid.*, p.53.

¹⁰ Wolfgang Pehnt, "Always Straight On: The Straight Path in Modern Architecture," *Daidalos* (March 1993), p.23.

¹¹ *Ibid.*, p.23, from Adolf Rading's 1928 "Die Typenbildung und ihre stadtebaulichen Folgerungen".

¹² Phil Patton, *Open Road: A Celebration of the American Highway* (New York: Simon and Schuster, 1986), p.98.

-
- ¹³ Sanford Kwinter and Daniela Fabricus. "Generica," *Mutations* (Barcelona: Actar, 2000): 525.
- ¹⁴ Joan Busquets, "New Urban Phenomena and a New Type of Urbanistic Project," *Present and Future: Architecture in Cities* (Barcelona: UIA, 1996): 286.
- ¹⁵ Marc Augé. *Non-places: Introduction to an Anthropology of Supermodernity* (London: Verso, 1995).
- ¹⁶ Rem Koolhaas. *Delirious New York: A Retroactive Manifesto for Manhattan* (New York: Oxford University Press, 1978).
- ¹⁷ Francine Houben and Luisa Maria Calbrese (eds.) *Mobility: A Room with a View* (Rotterdam: Nai Publishers, 2003): 12.
- ¹⁸ Marc Augé. *Non-places. Introduction to an Anthropology of Supermodernity* (London: Verso, 1995).
- ¹⁹ The design was generated by the Architecture + Engineering firm of Parsons Brinkerhoff.
- ²⁰ Carol Burns. "On Site: Architectural Preoccupations," in Andrea Kahn (ed.), *Drawing/Building/Text: Essays in Architectural Theory* (New York: Princeton Architectural Press, 1991): 147 – 167.
- ²¹ Aldo Rossi. *The Architecture of the City* (Cambridge: MIT Press, 1982).
- ²² Linda Pollak. "Partially open spaces, boundary events, and transitional objects. *Appendx: culture, theory, praxis* 4 (1999): 77- 78.
- ²³ While living within Amsterdam's central ring, I was intrigued by the dimensionally narrow, but spatially ample street sections and vibrant street life—largely due to the population density that its' compact urban structure created.
- ²⁴ A range of "the end of public space as we know it due to changes in technology" positions have been articulated. See William Mitchell, *e-topia: "urban life, Jim-but not as we know it"* (Cambridge: MIT Press, 1999) and M. Christine Boyer, *Cybercities: Visual Perception in the Age of Electronic Communication* (New York: Princeton Architectural Press, 1996).
- ²⁵ Rosalyn Deutsche. "Art and Public Space: Questions of Democracy," *Social Text* 33 (1992): 51.
- ²⁶ Hannah Arendt. *The Human Condition* (Chicago: University of Chicago Press, 1958).
- ²⁷ Boston Redevelopment Authority. *A Civic Vision for Turnpike Air Rights in Boston* (Boston: BRA, 2000): 29