Broken Sites

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In her article *Civitas Oecologie: Infrastructure in the Ecological City*, Kathy Poole argues that "we need to revalue the contemporary systems approach for 'engineering' infrastructure: to wrest them from the tyranny of efficiency, technical experts, and neutrality; and to reinvest common structures with the mythic content that allows connections between inert object and civic imagination and human and natural systems."[1] This call for architects and landscape architects to participate in the design of infrastructural systems in order to mine their potential within the public realm is closely echoed in the emerging discourses of landscape urbanism and infrastructural urbanism. The former, perhaps most consistently championed by Charles Waldheim[2], "establishes the significance of infrastructure and its associated landscape in the development of contemporary urbanism, and in the generation of public space,"[3] with projects tending to address urban voids between infrastructure and building[4]. In contrast, infrastructural urbanism primarily concerns itself with the design of infrastructure itself as part of larger cultural and ecological systems, often presented as large-scale urban masterplans for new development.[5] One overlap that occurs between the two discourses is in the realm of existing massive infrastructure works and the attempts to remediate their negative effects on the urban environment through the creation of new public spaces.[6]

Though the last two decades have yielded a great amount of research and proposals on the topic of stitching infrastructure into its surroundings, many projects have limited themselves to dealing primarily with the manipulation of the ground plane, whether by suggesting a loose programming through hard and soft scape interventions on the existing ground[7] or by decking over and hiding infrastructure to create a "new" ground plane ready for more typical development.[8] While sharing these ambitions, the projects presented in this paper, from my undergraduate thesis project to more recent work done as part of my practice, Ballman Khapalova, propose a different approach, beginning with the specific selection of "Broken Sites" that cannot be remediated by ground plane manipulation alone. Further, in contrast to calls for open-ended systems rather than definitive built forms,[9] these projects propose a design methodology that is both definitive and open ended, rooted in a deep reading of site translated into built three-dimensional form. To quote Carol Burns in her essay *On Site*: "The site is a work, a human or social trace. It is comparable to a myth, temple or city that is open to archeological deciphering."[10] Treating the architectural, infrastructural, social, and ecological with equal weight, the Broken Site reading results in a vernacular language that is able to incorporate and make sense of disparate conflicting elements while preserving and amplifying the site's unique existing physical and ephemeral characteristics. Though formally and spatially definitive, each project is somewhere between the determinacy of a building and the open possibility of a landscape: rather than prescribing a specific use, they are programmatically suggestive, awaiting input from the community as well as time.

A Civic Plaza: Public Library, Community Center, and Vertical Park Underneath the Manhattan Bridge, New York, New York

The Cooper Union Irwin S. Chanin School of Architecture, Thesis (Thomas Leeser, Thesis Advisor), 2007

Building on instances of informal appropriation of spaces below elevated roadways by various groups and uses such as skateparks, exercise groups, and outdoor billiard halls,[11] the project aimed to re-inhabit the vacant, deserted space created at the turn of the century by the insertion of the Manhattan bridge into the city fabric, currently occupied by a large stone bridge footing, a salt storage shed, and a baseball field where no games were ever played. The strategy was to acknowledge the presence of the bridge and make it the central focus of the complex, much like the way Eduardo Souto de Moura's Braga Municipal Stadium focuses on a sporting event, preserving the unique spatial and formal qualities of a place inhabited for over 100 years at the scale of infrastructure rather than building. Rather than filling the empty space, two new shell structures define its boundaries and allow for the reconciliation of the scale of the body with the scale of the bridge through the introduction of a library, community center, public plaza, vertical park, and a direct pedestrian connection to the bridge above. Shifting from horizontal plazas to vertical thickened walls, the shells simultaneously define and activate interior and exterior spaces, "housing" the bridge within the city.
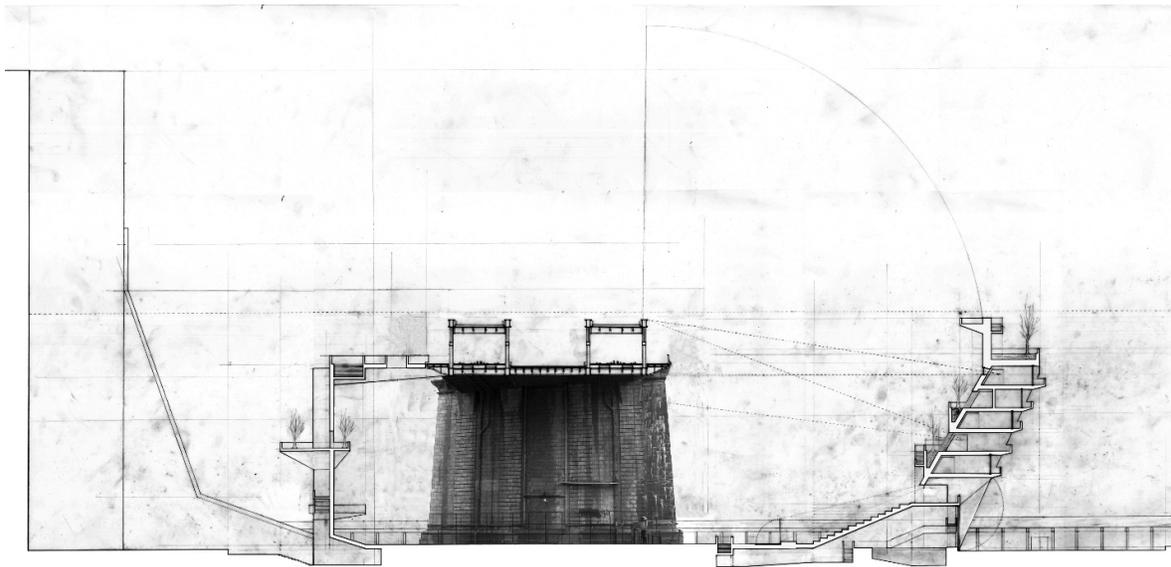

Figure 1: Cross section of Manhattan Bridge project showing "shell" buildings defining the space of the bridge.

The Mat Building as Connective Public Space: University, Sports, and Commercial Plaza in Rio de Janeiro, Brazil

Harvard Graduate School of Design (Professors Jorge Silvetti and Paul Nakazawa), 2011

The Maracanã area in Rio de Janeiro is a series of large-scale "islands" separated by major highways, canals, and railroads that cut across the urban fabric, not unlike the challenges faced by Weiss/Manfredi in the Olympic

Sculpture Park project. The main point of entry to the site is the Maracanã metro station floating nine meters above the rail tracks. At the time of the project it only bridged south, connecting directly to the Universidade do Estado do Rio de Janeiro (UERJ) (20,000 students) and the Maracanã soccer stadium (100,000 capacity). The entrances to the university and stadium are six and twelve meters above ground level, respectively. To the north is Mangueira, one of Rio's largest favelas, which lacked access to either the metro station or the amenities which exist in the more developed residential fabric to the south. The project uses the typology of a multi-level mat building to mediate and provide connections between the different levels and destinations of the site while becoming a place within itself. It is composed of three program components: education, athletics, and commerce. The university extension introduces the scale of the American campus originally envisioned for the university. The sports facilities are a reorganization of those already existing on the site, including the elevation of the running track, to open them up to public use and open-air spectating. The commercial spaces serve both the everyday needs of the local residents as well as those of the transient population of students and stadium visitors. The whole complex acts as a series of open-air public plazas, perfect as holding grounds for the large crowds which gather at the stadium for soccer games and other major public events.
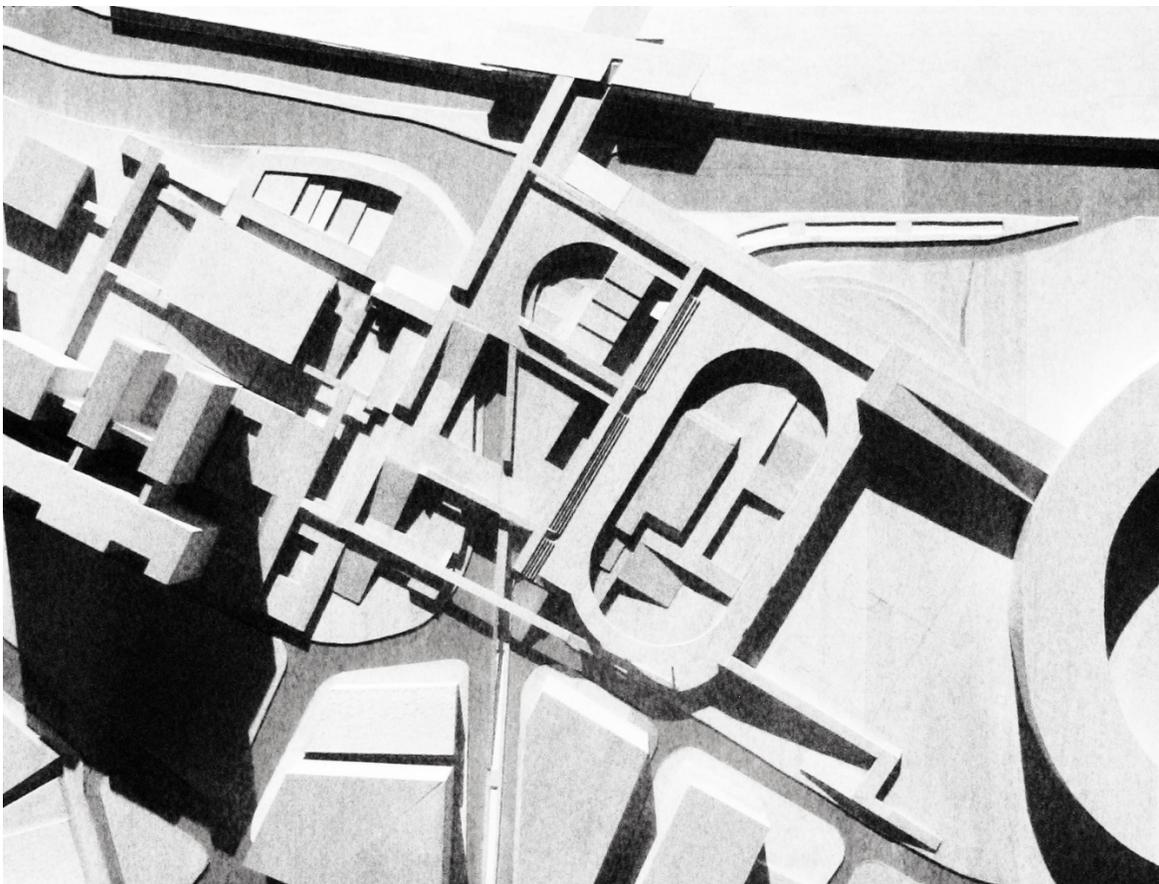

Figure 2: Model photograph of Maracanã mat building with education, commercial, sports, and open-air plaza components.

Piazzas of the Tiber/ Roman Façade, Rome, Italy

Ballman Khapalova, 2017 - present

The relationship between water and public space has a distinct character in Rome, encompassing both the interiority of villa, palazzo and bath house and the exteriority of street, piazza and fountain. The care taken in the engineering of aqueducts that traverse a continent is matched only by the extreme sensitivity with which that water is delivered at human scale. But in parallel runs a monumental neglect for the most important and central water feature in the city. The Tiber River cuts a serpentine path through Rome that spatially and experientially divides the city, unlike examples such as the Seine in Paris, where the waterfront is an active part of urban life. Seasonal flooding, as well as the long vertical drop from street level down to the Tiber—the result of flood walls constructed over a course of fifty years at the turn of the 20th century—makes strategies of direct connection to the water, such as the historic Porta di Ripetta or the recent Chicago Riverwalk by Sasaki Associates, impractical.

By addressing the interruption created by the Tiber, an opportunity arises to create new public work that can revitalize and connect both sides of the river. Initiatives such as *Eternal Tiber* have already begun to show the river's potential to draw public life to the riverfront through temporal installations.[12] This proposal suggests a permanent architectural intervention by horizontally extending the urban edge beyond the floodwall, introducing a continuous elevated river promenade into the center of the city. Supported by a colonnade, the promenade becomes a new river façade, resonating with the architectural language of its context, in particular Piazza San Pietro. Each existing portion of the Tiber, as defined by the rhythm of its bridges, is loosely programmed relative to a reading of the adjacent fabric through history, current use patterns, and physical characteristics. By thickening the available space at street level, currently a narrow sidewalk, the new façade creates spaces such as outdoor galleries, swimming pools, gardens, and amphitheaters to allow pedestrians to enjoy the river without having to descend to its unpredictable shores.

Figure 3: River level view of the Roman Façade/Piazzas of the Tiber proposal showing the variation of the colonnade façade.

Equally important is the manner in which the façade interacts with rising seasonal flood waters. Interior program is situated at street level while pools, terraces, outdoor galleries, and so on may exist at lower levels and are allowed to flood when necessary. The existing raised banks at the base of the flood walls are removed to increase the available volume within the void for flood water to pass.

The Tiber River is a derelict and isolated condition within Rome, but it also presents an opportunity for the city to grow and to evolve from within its historic center. The river facades, piazzas and programmatic opportunities of this proposal offer an optimistic solution to the problem of a stagnating historic city that lacks informal spaces of recreation for both resident and tourist. It breathes new life into everyday experience while continuing to value the city's multivalent relationship to its water.

Figure 4: In the Piazza of Sport, the space of the façade is inhabited with pools, outdoor exercise rooms, lawns, and playgrounds.

St. John's Park, New York, New York
Ballman Khapalova, 2018 - present

Building on such precedents as Rafael Moneo's Plaza Fueros in Pamplona and the Parc de la Trinitat (Joan Roig and Enric Batlle) in Barcelona, this project deals with a traffic circle in the heart of Manhattan.

Historically, St. John's Park was a private neighborhood square that later became a freight terminal as the vicinity shifted from upper-class residences to industrial warehouses. Currently, the "park" is a traffic circle that acts as the terminus of the Holland Tunnel and entry to Manhattan, passed through by over 100,000 people per day.

Urbanistically, St. John's park is a dead zone. Entering the site from the north, the main Holland Tunnel exit distributes traffic into five directions using five different ramps, cutting the site into awkward traffic islands and severing connection between the residual space at the center and the perimeter streets. Because of the difficult morphology of these ramps and islands, the site remains inaccessible, unbuilt and unbuildable. Whereas most other open spaces of equivalent size throughout the city are dedicated either to green space or street life, St. John's Park remains permanently closed to the public.

Figure 5: *Overall view of the new proposed St. John's Park showing the continuous loop that integrates architectural, infrastructural and landscape elements.*

The proposal for a new St. John's Park creates a two-story form that is generated directly by the geometry of the existing offramps, so that Holland Tunnel traffic may continue unimpeded. The proposed intervention is a continuous loop that travels from street level to one level below ground, defining roadways, stairs, interior spaces, and various scales of parks as it travels through the site and excavates its center while opening it up to the sky. The loop integrates infrastructural, architectural, and landscape elements into one holistic entity that functions both as a piece of urban land art (recalling Richard Serra's *Arc* installation on the site from 1980-1987) and as a community hub. While the current condition forces pedestrian traffic to circulate around the offramps that occupy the site, the new proposal allows pedestrians to move freely in all directions into and through the park, creating a place of connection between surrounding neighborhoods.

The project is composed of multiple parts that exist at and below street level. Central to the form are the existing tunnel offramps, whose traffic is screened from pedestrians by the vertical surface of the loop, and surrounding buildings that create a frame for the park. At street level along the new perimeter is a series of new small parks consisting of playgrounds, lawns, seating areas, and dog parks. Passing beneath the existing offramps, grand staircases connect the street to the central sunken park, 300' in diameter and open to the sky. At the perimeter of the sunken park are interior spaces that can serve a variety of functions, enriching and defining the park experience: movie theaters, classrooms, galleries, library, retail, restaurants, etc. The project aims to create places that people want to experience and inhabit, but the intention is to leave final definition of the programs of the various spaces up the community, and for the intervention to be robust enough to support changing uses over time.

The proposed evolution of St. Johns Park can participate in the continuing legacy of regeneration and re-creation that is taking place on the west side of Manhattan. Similar to the High Line and Hudson Yards projects, St. John's Park repurposes a piece of vital infrastructure by using the constraints of the existing conditions to shape a new potential of space and function. But going beyond the manipulation of the ground plane, it also creates a fully three-dimensional form that considers the site from all sides—from above, from below, and from the street—as well as giving equal treatment to infrastructural and urban elements, thereby enhancing both pedestrian and vehicular experience.

St. John's Park can be a thoroughfare or a destination. In its role as a magnet the central space is be able to facilitate a multitude of functions, for instance: a dense tree-filled grove in summer and an ice-skating rink in winter, a venue for outdoor performance or film, a farmer's market, playground or outdoor gallery. While programming within the park spaces can significantly increase the quality of life for the inhabitants of surrounding neighborhoods, the intervention, as well as its activities and installations, can also serve as a formal city gate to Manhattan for the drivers who pass through it.

Conclusion

In cities, large-scale works of civil engineering have to be afforded the chance to be seen optimistically—as keepers of open space, as resistance to private development, as repositories of civic potential that can be unlocked by a careful reading of site. To quote Carol Burns again: "Though the site is a product of culture, it is by nature not a finished or closed product. It is an artefact of human work that can neither be completed nor abandoned. Its meaning can never be determinable. The site, like the human condition, is open."[13] The imaginary capabilities of the design community have to be used first to recognize the unfinished nature of Broken Sites that by all practical considerations are considered complete, and second, to sensitively add to their already constructed but incongruous conglomeration of parts in order to fold them into the realm of public use and imagination. We must avoid simply thinking of these sites as mistakes of our past, and learn to see their potential for the future.

[1] Kathy Poole, "Civitas Oecologie: Infrastructure in the Ecological City," *The Harvard Architectural Review,* volume 10 (1998): 132.

[2] Charles Waldheim coined the term 'landscape urbanism' in 1996 and has written widely on the subject. In particular, see Charles Waldheim, *Landscape as Urbanism* (Princeton: Princeton University Press, 2016) and Charles Waldheim, ed., *The Landscape Urbanism Reader* (New York: Princeton Architectural Press, 2006).

[3] Elizabeth Mossop, "Landscapes of Infrastructure," in *The Landscape Urbanism Reader*, ed. Charles Waldheim (New York: Princeton Architectural Press, 2006), 165.

[4] See Stan Allen's discussion and definition of landscape urbanism in Stan Allen, "Infrastructural Urbanism," in *Infrastructural Monument*, MIT Center for Advanced Urbanism (New York: Princeton Architectural Press, 2016), 54-59.

[5] Stan Allen is credited with coining the term 'infrastructural urbanism' and has written widely on the subject. In particular, see Stan Allen, *Points and Lines: Diagrams and Projects for the City* (New York: Princeton Architectural Press, 1999): 46-137; as well as his article "Landscape Infrastructures" and other essays in Katrina Stoll & Scott Lloyd, eds., *Infrastructure as Architecture: Designing Composite Networks* (Berlin: Jovis, 2010). See also recent projects such as Michael Maltzan's Sixth Street Viaduct in Los Angeles.

[6] See overlaps, particularly in the discussion of existing highway infrastructure, between Thomas Hauck, Regine Keller and Volkner Kleinekort, eds., *Infrastructural Urbanism: Addressing the In-between* (Berlin, Dom Publishers, 2011) and essays such as "Urban Highways and the Reluctant Public Realm" by Jacqueline Tatom in *The Landscape Urbanism Reader*.

[7] Many realized and proposed projects deal with the condition of the ground plane as the primary strategy of intervention when dealing with creating public space within areas of infrastructure. Well-published examples in the U.S. include The High Line by Diller Scofidio + Renfro with James Corner Field Operations, SWA's Buffalo Bayou Promenade, and Michael Van Valkenburgh Associates' Brooklyn Bridge Park. See also project compilations such as "Landscape Urbanism Strategies," *Independent Magazine of Architecture + Technology*, no. 37 (2011).

[8] "Decking over" strategies refer to projects such as the Hudson Yards development in New York City, which decks over previously open railyards to create a cleared ground upon which typical high-rise office, commercial, and residential towers are then built with no visible reference to the original infrastructural site condition.

[9] See James Corner, "Terra Fluxus," in *The Landscape Urbanism Reader*, 21-34, in particular page 31 where he refers to strategies of landscape urbanism as an attempt "to create an environment that is not so much an object that has been 'designed' as it is an ecology of various systems and elements that set in motion a diverse network of interaction" as well as claiming "unlike architecture, which consumes the potential of a site in order to project, urban infrastructure sows the seeds of future possibility, staging the ground for both uncertainty and promise."

[10] Carol J. Burns, "On Site: Architectural Preoccupations," in Andrea Kahn, ed., *Drawing Building Text* (New York: Princeton Architectural Press, 1991), 166.

[11] See Charlotte Malterre-Barthes, "The Highway's Shadow: Zurich's *Hardbrücke"* (93-108) and Maren Harnack, Martin Kohler, "As Found. Use, Meaning and Re-appropriation of Contentious Urban Spaces" (131-144) in Hauck, Keller and Kleinekort, eds., *Infrastructural Urbanism* for various examples of informal appropriation of spaces below elevated highways.

[12] Kristin Jones is an artist who dedicated almost twenty years to the *Eternal Tiber* project, whose goal was to show Rome the latent potential of its riverfront through the creation of "Piazza Tevere," an open-air contemporary art laboratory, located within the portion of the Tiber between Ponte Sisto and Ponte Mazzini. The project's most recent work was an ephemeral 1800ft drawing done by William Kentridge entitled "Triumphs and Laments," (2016) executed on the flood wall by removing accumulated residue to reveal the lighter stone surface below. See http://eternaltiber.net/.

[13] Burns, "On Site," 167.