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### Title

Infrastructural Optimism

### Permalink

<https://escholarship.org/uc/item/25w8v3q7>

### Journal

Places, 21(1)

### ISSN

0731-0455

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### Publication Date

2009-05-19

Peer reviewed

# Infrastructural Optimism

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Infrastructure reconstruction is often the first and most obvious response to catastrophe. Following the 1995 Northridge, California, earthquake, the rebuilding of highways ahead of schedule and under budget not only expedited but also symbolized a return to normal and a restabilization of daily life. The same could be said for the restoration of public transit in Lower Manhattan after the attacks of 9/11, where the near immediate resumption of bus and subway service served as a symbol of resilience.

Throughout American history, large-scale public works have served as symbolic unifiers and representations of collective optimism. The mobility of the populace, in particular, has been a core tenet of cultural identity. Thus, the Interstate highways unify the country not only by stringing it together with concrete but also by elevating speed and mobility to the status of national entitlement. Concurrently, we expect our street networks, the freeway's slower, older brother, to serve us functionally, formally, and symbolically. In addition to providing access, streets establish a sense of order and hierarchy, orient us within urban networks, and, at the neighborhood scale, operate as spaces for social connection. Freeways and streets together bookend our understanding of roads in the production and reproduction of public space.

The restoration of mobility infrastructure can also play a significant role in the wake of catastrophe. It can serve first as part of the recovery narrative, and next as a symbol of restoration and reconnection. More powerfully, it can be an instigator of transformation and reinvention. In this fuller role, infrastructure has the opportunity to link the collective and the individual through built form, becoming a formidable component of urban reimagining.

## Interstate 10

In the case of New Orleans, the lack of infrastructure reconstruction since Hurricanes Katrina and Rita in 2005 has perpetuated the absence of a recovery narrative.<sup>1</sup> A vastly disproportionate share of the destruction and loss caused by the storms was borne by poor, mostly African-American residents, exposing an already divided city. At the time of evacuation this appeared as a line between the mobile and the immobile—those who could leave and those left behind. Those who did evacuate left primarily by private automobile along I-10 West, toward Houston. Of those who did not, an estimated 150,000 were car-less, and thousands more were immobilized by age, illness, or incarceration.<sup>2</sup> For them, New Orleans' damaged mobility infrastructure was at best neutral, regularly an adversary, and in some cases a symbol of hopelessness.

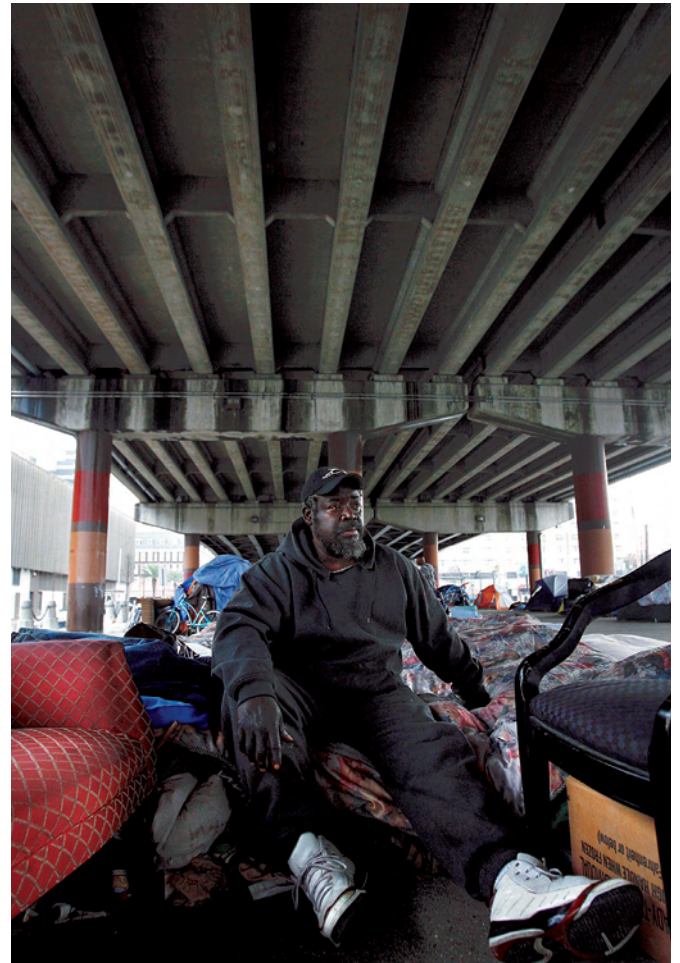
The case of I-10 illustrates the power of infrastructure to symbolize both the promise of recovery and the despair of neglect. For example, I-10's twin-span bridge over Lake Pontchartrain was destroyed by the hurricane's storm surge. But unlike much of the city's still-stagnant public-transit infrastructure, it was repaired so rapidly that the contractors received a \$1.1-million bonus.<sup>3</sup> A trucker interviewed by the *New York Times* called the speedy



repairs “between exceptional and heroic.”<sup>4</sup> Yet this repair provided little inspiration for city residents. Its location outside New Orleans proper and its mere reconstruction rather than reinvention, did little to create a sense of collective optimism.

In the days following the storm, I-10 became loaded with the symbolism of failure. The collapse of the bridge east not only cut off an evacuation route, but also undermined trust in the national support network. Crowds of people attempted to walk out of town on the highway, only to encounter low-lying stretches in the city center that were submerged and impassable. Meanwhile, outside the Louisiana Superdome, hopeful evacuees waited on the hot, empty highway for buses that took days to arrive.

The images of I-10 that endure from 2005 are not of a rebuilt bridge, but of a highway that offered no avenue of escape for an abandoned population. Worse were images



of hurricane fatalities floating among its support columns or lying covered by tarps on its shoulders. Today, the slow return of public transit keeps those without automobiles immobilized, and I-10 continues as a symbol of urban anxiety, sheltering a growing homeless population beneath its elevated sections and perpetuating the divide between the mobile and the immobile.<sup>5</sup>

In an attempt to promote recovery in the city, various government agencies have proposed plans for new public mobility infrastructure. Among these are general road repairs, increased diversity in transit options, and a new “two-tiered” evacuation plan. More emblematically, perhaps, the Unified New Orleans Plan has proposed removal of the elevated portion of I-10 over Claiborne Avenue.<sup>6</sup>

In conjunction with extensive reconstruction, this partial erasure would allow a reconsideration of modernization, fluidity, and the public realm in the postmillennial

city. In America, the inner-city Interstate has long represented the conflict between progress and urban vitality. The widespread destruction in New Orleans provides an opportunity for planners to abandon this deadlocked discourse and seek visionary new models that recognize the power of public infrastructure to spark a sense of postdisaster recovery.

**Above Left:** New Orleans on August 29, 2005, showing Interstate 10 at West End Boulevard, looking toward Lake Pontchartrain. AP Photo by Kyle Niemi, U.S. Coast Guard.

**Above right:** Alex Clay, homeless and living under the Claiborne Avenue overpass near Canal Street, lost his Lower Ninth Ward home and all his possessions to Hurricane Katrina. Photo by Chris Granger, *Times-Picayune*.

**Opposite:** Flood zone and principal sites in New Orleans. Diagram by author from satellite image.



## Model Infrastructures

Few models exist of visionary infrastructural thinking at this scale. In the Depression years of the 1930s, the Works Progress Administration (WPA) recognized the value of mobility to social, psychological, and economic recovery and devoted nearly one-third of its \$4.8 trillion in expenditures to highway, road, and street projects.<sup>7</sup> The results were particularly pronounced in New York City, where Mayor Fiorello LaGuardia, assisted by his dynamic chief of public works, Robert Moses, managed to spend an impressive one-seventh of the total 1935 and 1936 WPA budget. In those two years alone, Moses directed \$113 million to the New York Department of Parks, which reshaped the public realm, adding beaches, playgrounds, swimming pools, bathhouses, and zoos.<sup>8</sup> As Marta Gutman noted:

*Moses and his colleagues were lauded for putting ordinary people first; for celebrating them with remarkable, technically sophisticated public architecture; for democratizing access to recreation; and for using New Deal dollars to run play schools and day camps and to offer swimming lessons at the pool complexes.... The architectural press also chimed in, suggesting that innovative design and breadth of social vision went hand in hand.<sup>9</sup>*

Moses's true brilliance, however, was in understanding the role of mobility infrastructure in the modern city. The new recreation facilities improved the lives of New Yorkers, but it was the expressways—for good and bad—that transformed the city. Marshall Berman captured this paradox when he noted, “Moses was destroying our world, yet he seemed to be working in the name of values we ourselves embraced.” Moses's WPA projects “expressed a vision—or rather a series of visions—of what modern life could and should be.”<sup>10</sup>

Originally lionized, and then vilified, Moses and the impact he had on the city have more recently been reconsidered in books and exhibitions. His emphasis on mobility connected the colonial origins of the American road with Corbusier's Radiant City and the obsessions of 1960s collectives such as Ant Farm and Archigram.<sup>11</sup> Contemporary projects like Manhattan's High Line perpetuate this lineage, proving the continued relevance of mobility infrastructure as a symbol for optimism and a catalyst for development.<sup>12</sup>

The commitment to transit infrastructure at the World Trade Center site is a contemporary example that highlights the importance of rebuilt infrastructure to recovery

narratives. The City of New York spent \$323 million to build a temporary PATH train terminal, merely a down payment on the forthcoming \$2 billion transit hub, designed by the Spanish engineer Santiago Calatrava, which will replace the old station beneath the twin towers.<sup>13</sup>

This investment in highly visible, architecturally substantial solutions reinforces the significance of mobility infrastructure to the sense of recovery post-9/11. Unlike the mediocre and functionally incomplete infrastructural response in New Orleans, New York's facilities operate as placeholders of a larger program of reconstruction in Lower Manhattan.<sup>14</sup>

## The Street

The Pink Project, initiated by the actor Brad Pitt's Make It Right Foundation, tried to serve as such a placeholder in the Lower Ninth Ward of New Orleans. The assembling of house-shaped steel frames covered in hot pink tarps represented dollars raised toward construction. These structures also served as visible reminders of the commitment to “make it right” for hundreds of families left homeless after the hurricanes. Although the project goals have changed, Pink did serve as a reminder of the commitment to the area.<sup>15</sup>

Now, as the first real houses to come from the Make It Right effort are being built, the street-scale infrastructural trauma of New Orleans is also slowly being addressed. Over the next five years, the federal Submerged Roads and Damaged Roads programs along with the Louisiana Department of Transportation will spend \$360 million on road reconstruction.<sup>16</sup> Although hardly a radical reimagining, the work does include small changes that help provide a sense of optimism. For example, city agencies are cooperating to lay utility lines prior to repaving to prevent the destructive and costly practice of digging up newly paved streets. In an effort to promote diverse modes of mobility, many roads will have designated bike lanes—a simple addition, yet one that reflects attention to inclusivity.<sup>17</sup>

Such small-scale initiatives are critical in a place where street life is integral to the local culture. At a civic scale, parades and funerary processions are an important manifestation of cultural affiliation in New Orleans. And at a neighborhood scale, the relation between street and stoop or porch allows cross-generational, neighborhood interaction. Streets in some of the more densely populated areas of New Orleans are not unlike those of Greenwich Village, which Jane Jacobs described in the early 1960s, and where ease of surveillance built communal ties and a sense of public ownership. The intermediate space of the

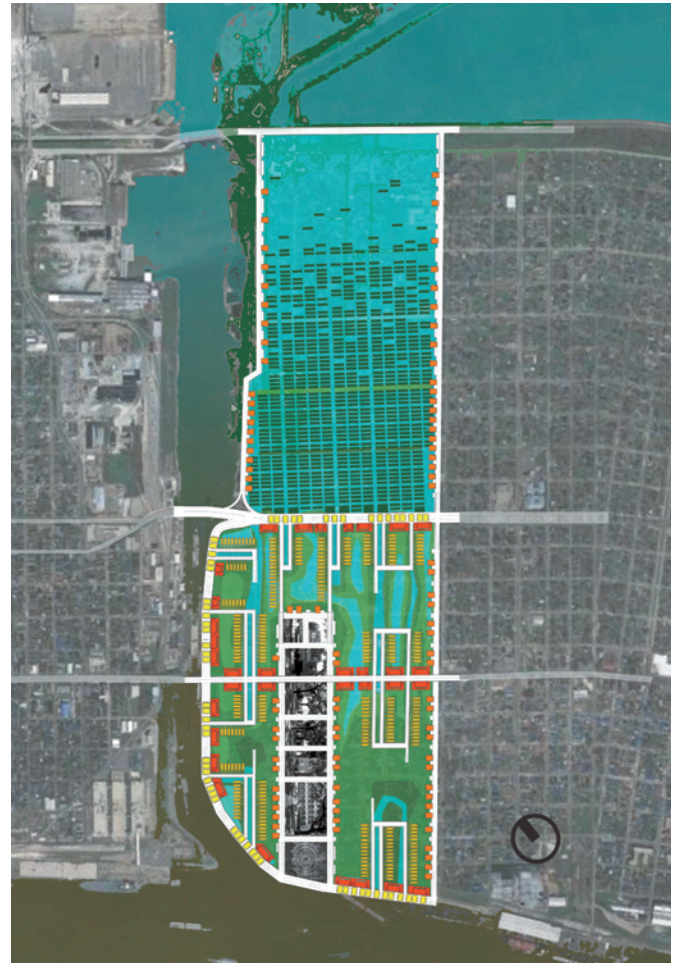
stoop promotes community relations without sacrificing personal privacy. Casual surveillance by neighbors then creates an “intricate, almost unconscious network of voluntary controls and standards” which promotes a self-regulated, yet flexible environment.<sup>18</sup>

This theory of “eyes on the street” relies on a neighborhood that is well-populated, pedestrian oriented, and mixed in terms of use. But it also relies on structures that allow direct view and mediated verbal, visual, and physical contact between semi-protected private space and the public sidewalk and street. The slightly elevated position of the traditional New Orleans porch provided such a space, and a narrow front setback from the street established a socially accepted line beyond which the lot and house were considered private.

Post-Katrina planning and new building codes have, however, altered the relationship between the house and the ground, forcing a renegotiation of spatial relationships between porch, yard, and sidewalk/road. In the Make It Right prototype houses, the five-foot suggested elevation above the ground plane has frequently been increased to eight feet to create a crawl space under the house usable for parking, mechanical systems, or storage.<sup>19</sup> The side effect, though, is disruption of earlier patterns of neighbor-to-neighbor and neighbor-to-stranger interaction. The edges of the informal social network are thus fractured. The porch becomes a platform segregated from the ground plane, causing the edge of the road—the line between public and semi-public—to become blurred. Furthermore, the driveway is no longer in view by residents above as it slips beneath the house, also breaching the privacy of the back yard.

Some of the designs for Make It Right houses articulate the front stair as an extended sequence between ground and porch. But the overall effect is still a disintegration of the contiguous relationships that once defined the shared public social space of the road. Among the Make It Right prototypes, the proposal by Eskew+Dumez+Ripple is notable in that it provides a multitiered street front to better contain the public zone and rethicken the semi-public zone. More successful design solutions would more aggressively take into account the significance of the road/stair/porch composite as a collective and semi-collective space.

The NOKat proposal by *emerymclure* architecture recognizes the problem of segregating houses from the ground plane and the value of reimagining their relationship to street infrastructure.<sup>20</sup> Drawing on nearly a decade of work studying the qualities of the local “terra viscus,” their proposal creates a secondary, elevated ground plane



to maintain the sectional relationship between road, sidewalk, porch, and house, while depressing a semi-sacrificial layer of parking, courtyards, and garden.

According to *emerymclure*: “The terra viscus is a super-saturated soil, one that is never completely solid or liquid, one that is never in stasis, but in a continuous state of being made and being removed. This ground consists of geological, cultural, ecological, and tectonic conditions that interweave and overlap to create a non-repetitive, patterned identity of multiple and hierarchically understood variables.”<sup>21</sup> Their premise is that the successful inhabitation of southern Louisiana requires respect for its hybrid solid/liquid landscape rather than costly and futile technological resistance. They propose to “reconceive

Above: NOKat proposal by *emerymclure* architects. Site plan.



Floating sublevel  
 Power film architectural fabric  
 Rainwater collection  
 Runoff purification swale  
 Car/floodgate life mechanics



Single family streetscape



the infrastructure to work with the natural systems.”<sup>22</sup> A new infrastructure—combining elevated ground planes, a range of mobility modes, and water mediation rather than control—could encourage symbiotic existence between the landscape and its inhabitants.

Three integrated layers of roadspace appear in the *emerymclure* plan. The causeway becomes a containing northern edge to new, denser development, and also provides access to a lower level of water-based transit. The low-speed road grid that organizes the interior neighborhoods and connects to the sidewalk and porch maintains the street as a space for social interaction. Last, car storage is accommodated in the depressed areas of the single-family and low-scale, mixed-use zones, and on elevated platforms in the higher density towers.

At the base of the towers, *emerymclure* further proposes a high-speed rail line, which, combined with new links to water transit, would increase mobility options and access. This multitiered system sees both high-speed and low-speed movement as important to a reimagined public sphere.

Above: NOkat proposal by *emerymclure* architects. Infrastructure section and perspective.

## A New Era for Infrastructure

In terms of functionality, efficiency, and safety, the American Society of Engineers has rated the quality of America’s infrastructure at C and D levels.<sup>23</sup> But what about the contribution infrastructure might make to the design environment? And what of its potential for collective postdisaster recovery?

Typically, infrastructure is intended only to facilitate the invisible, equitable, and timeless distribution of public resources. Yet, unlike water pipes and sewer lines, roads are public spaces. In the past, the lack of design engagement with mobility infrastructure has limited its potential as an artful and meaningful element of the public realm.

To combat the dire state of infrastructural quality in the U.S., President Barack Obama has created the National Infrastructure Reinvestment Bank, which will enhance previous commitments to infrastructure by an additional \$60 billion over the next ten years.<sup>24</sup> This allocation is linked, among other programs, to a new stimulus package, which may become a twenty-first-century version of the WPA. This large-scale program of infrastructure investment would be well-served by consideration of the lessons of New Orleans. While preventing the next disaster is obviously a vital concern, the new

programs should extend beyond the functional and should emphasize a vision for infrastructure that supports its value as civic investment. Reimagining road space at the national and local levels means envisioning a new mobility network that incorporates social, political, and economic goals, and that brings innovative new architectural attention to the public sphere.

### Notes

1. The concept of the recovery narrative comes from Lawrence Vale and Thomas Campanella, *The Resilient City* (Oxford: Oxford University Press, 2005).
2. Eliza Johnston and Brendan Nee, "A Methodology for Modeling Evacuation in New Orleans," unpublished paper, University of California, Berkeley, Department of City and Regional Planning, 2006. Available for download at [www.bnee.com](http://www.bnee.com).
3. Public transit, more frequently used by the less affluent, is still slow to recover. The Regional Transit Authority lost two out of three of its maintenance facilities, 30 of 66 streetcars, and 197 out of 372 buses. More than two and a half years later, the city has restored only 48 percent of public transit routes and the operation of 19 percent of its buses. For recovery statistics, see Amy Liu and Allison Plyer, "A Review of Key Indicators of Recovery Two Years After Katrina," *The New Orleans Index* (The Brookings Institution Metropolitan Policy Program, 2007).
4. Jonathan Schwartz, "I-10, Another Victim of the Storm, Enjoys a Quick Rebirth," *New York Times*, January 3, 2006.
5. Shailla Dewan, "Resources Scarce, Homelessness Persists in New Orleans," *New York Times*, May 28, 2008.
6. In precedents like Boston's Big Dig, the logistical nightmare of building new transportation infrastructure in a crowded urban core has only partially resulted in functional successes, and still struggles with a symbolism of corruption, over-expenditure, and faulty workmanship. In New Orleans, however, the recent hurricanes intensified a trend of population loss that has existed since the 1960s. This provides good cause to examine the removal of existing transportation infrastructure in the interest of a more diversely mobile population.
7. Works Progress Administration, *Report on the Works Program*, (Washington, D.C.: United States Government Printing Office, 1936), pp. 13, 17. This is equal to about \$76 trillion today.
8. Marta Gutman, "Equipping the Public Realm," in *Robert Moses and the Modern City: The Transformation of New York* (New York: W. W. Norton & Co., 2007), p. 73.
9. *Ibid.*, p. 81.
10. Marshall Berman, *All That Is Solid Melts Into Air: The Experience of Modernity* (New York: Penguin Books, 1988), pp. 294-95.
11. Archer Butler Hubert in *Historic Highways of America*, vols. 1-15. (Ohio: The Arthur H. Clark Company, 1902-1905) wrote that the colonial-era Cumberland Road was "our first and only great national road...a thoroughfare which should, in one generation, bind distant and half-acquainted states together in bonds of common interest, sympathy, and ambition."
12. Adam Sternberg, "The High Line, It Brings Good Things to Life," *New York Times*, April 29, 2007.
13. "Calatrava's WTC Transportation Hub Soars," January 22, 2004, on Lower Manhattan.info site, [http://www.lowermanhattan.info/news/calatrava\\_s\\_wtc\\_transportation\\_29863.aspx](http://www.lowermanhattan.info/news/calatrava_s_wtc_transportation_29863.aspx); and "World Trade Center (PATH Station)" at [http://en.wikipedia.org/wiki/World\\_Trade\\_Center\\_\(PATH\\_station\)](http://en.wikipedia.org/wiki/World_Trade_Center_(PATH_station)).
14. See "Review Roundtable: Is New Orleans a Resilient City?" *Journal of the American Planning Association*, Vol. 72, No. 2 (2006), pp. 245-57. This article also contains a disturbing comparison between reconstruction at the WTC site and in New Orleans, which questions whether New Orleans inhabitants are seen as "undeserving" or too "unsophisticated" to qualify for a response equal to that at Ground Zero.
15. Initially, the scattered forms were to be assembled over a six-week period as a direct representation of funding raised for the 150 houses. This goal ended up being rather unrealistic, and as of November, 2008—long after the installation was removed—funding for 85 of the 150 homes is now in place. The timeline has since been adjusted, as have fundraising strategies. The project now serves primarily as branding and public relations device, rather than a strict representation of funds raised.
16. Jaime Guillet, "City Road Construction Moving Into Overdrive," *New Orleans City Business*, Jan. 7, 2008.
17. Emilie Bahr, "\$220m in Road Repairs to Include Bike Lanes," *New Orleans City Business*, Sept. 10, 2007.
18. Jane Jacobs, *The Death and Life of Great American Cities*, (New York: Random House, 1961), pp. 29-74.
19. These five- and eight-foot heights are those mentioned by Alejandra Lillo, a partner in the design firm GRAFT, as being the ones they used in their particular Make It Right house design (interview by author, Oct. 11, 2008). The new Advisory Base Flood Elevation (ABFE) varies in actual dimension but is defined, according to FEMA, as "the height at which there is a 1 percent chance or greater of flooding in a given year."
20. NOKat = No Katrina, No Catastrophe, No Category. The NOKat project was originally commissioned by the University of Texas at Austin School of Architecture for their November 2007 symposium, "counterMEASURES." Unlike the Make It Right houses, NOKat was intended to be speculative and visionary at the urban scale. More on the symposium can be found at <http://soa.utexas.edu/events/counterMEASURES/>. More on emerymclure architects can be found at <http://www.emerymclure.com/>.
21. See "Terra Viscus: Hybrid Tectonic Nature," *emerymclure architecture*, research report.
22. "Terra Viscus...Terra Accommodo: Writing and Building in the Hybrid Tectonic Nature," *emerymclure architecture*, research report.
23. 2005 Report Card For America's Infrastructure, <http://www.asce.org/reportcard/2005/index2005.cfm?pic=3> (accessed Nov. 22, 2008).
24. "Barack Obama and Joe Biden, Strengthening America's Transportation Infrastructure" <http://www.barackobama.com/issues/additional/#transportation> (accessed Nov. 22, 2008).