PAPER

Commoning the Urban Residual: Approacing Clandestine Social Infrastructure

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Keywords: Social Infrastructure, Equity, Interstates

Critical infrastructure doubling as social infrastructure has been a useful strategy for centuries. Projects with these overlapping programs usually spring from a handful of different design scenarios. They are often built initially as hard infrastructure and converted to social infrastructure at the end of their useful life. They can be modifications of existing 'still-in-use' critical infrastructure projects. Lastly, they can be designed as overlapping critical and social infrastructure from their conception.

One method for establishing critical/social infrastructure is through enhanced public works projects where hard infrastructure is injected with additional social program. Often, this "thickening" of the program can face uphill battles related to increased funding, red tape, or public backlash, however, commoning, (the grass roots collaborative effort of a community to meet its needs), can be a viable alternative method for the creation of these enhancements. There already exist precedents of critical/social infrastructure evolving out of the commons. Chicano Park in San Diego and FDR Skate Park in Philadelphia are lasting examples which are related to residual space left after interstate highways were built.

This paper will present ongoing research and teaching related to the overlap of critical and social infrastructure specifically as it relates to atypical methods for their creation. It will present a design course that explores opportunities to create social infrastructure in the overlooked spaces left by the construction of critical infrastructure. It will discuss this on a global level through case studies from around the world and a local level from a series of student design projects situated in a mid-size southern U.S. city. In these projects, residual spaces, (the highway right-of-way and surrounding neighborhood), become the setting for projects that can tap into the commons and be re-imagined as social infrastructure.

"Conventional hard infrastructure can be engineered to double as social infrastructure."[1]

—Eric Klinenberg, *Palaces for the People*

INTRODUCTION

Hard, or critical, infrastructure intertwining with social infrastructure is not new. Creating systems and assets that make up the vital underpinnings of society while serving to provide a structure for social interaction has been a useful strategy for centuries. While these multiuse designs have a long history, they are still not widespread today. Some notable examples have been built in recent years including sculpture parks spanning transportation corridors, a waste-to-energy plant disguised as an urban ski slope, grain silos converted into an art museum, among others. These multiuse constructions and systems demonstrate a unique approach to urbanism and design that results in new and creative ways of promoting social interactions.

Throughout their usable life, projects weaving critical and social infrastructure often spring from a variety of unique design scenarios. One origination method for these is an 'afterlife' scenario. This occurs when a project built initially as critical infrastructure becomes disused and is converted to social infrastructure at the end of its functional life. Projects within this scenario indicate a soundness of the original structure coupled with an obsolescence of original program. The public often praises them for the creative reconsideration required for their transformation from derelict to useful. Examples include New York's Highline, Atlanta's Beltline or Johannesburg's Zeitz Museum.

Like the 'afterlife' scenario, a second version involves modifications of existing infrastructure. However, in this case the original critical infrastructure is still in use and remains so in its new form. Social infrastructure within this reconsidered scenario is added to existing projects without compromising their function as the original work's value makes it too important to decommission. This 'thickening' of program through the injection of social infrastructure might occur because the physical or social conditions around their existence have changed over

time and a transformation of the initial program is needed or desired. These can take the form of large-scale civic projects like BQE Park in New York or Klyde Warren Park in Dallas where cities construct large-scale social space over urban highways.

Lastly, designers can weave social and critical infrastructure together from a project's conception, as with Copenhill in Copenhagen or the Ponte Vecchio - at least in its current form. In these projects, social space intertwines with critical infrastructure and ensures the two will coexist.

All three of these scenarios produce a finished construction that provides a critical function for society while supporting the network of systems promoting social interaction. The origin scenario of these projects is often dependent on size. Mammoth construction projects require large, public funding streams. However smaller examples are possible within determined communities. Examples have originated out of the commons in a more 'make-shift' manner with projects like Maeklong Railway Market in Bangkok, Thailand, FDR Skate Park in Philadelphia, or Chicano Park in San Diego.

DEFINING INFRASTRUCTURE

> "Today, the word 'infrastructure' usually makes us think of what engineers and policy makers refer to as hard or physical infrastructure…Sometimes experts call these systems the "critical infrastructure."
>
> Eric Klinenberg, *Palaces for the People*

Critical infrastructure serves as an underlying foundation or framework of society. Projects of this type are typically that which are relied upon on to maintain the functions of everyday life. They often serve purposes that people consider basic to society and are essential to daily modern life. The United States government defined the term 'critical infrastructure' unambiguously in 2001. In the aftermath of the September 11th terrorist attacks, the U.S. Congress passed the Patriot Act. The law lays out sixteen sectors of critical infrastructure that are considered so vital their destabilization would considerably hinder the normal function of day-to-day life in the United States[3]. These consist of systems commonly considered infrastructure; (the chemical industry, financial services, commercial facilities, food and agriculture, communications, government facilities, critical manufacturing, healthcare and public health, dams, information technology, the defense industry, nuclear reactors, materials and waste, emergency services , transportation systems, energy, and water and wastewater systems.)[4].

While most understand critical infrastructure conceptually, this is not always the case with social infrastructure, and, in its typical sense, one does not necessarily equate critical infrastructure with social spaces[5]. Social infrastructure consists of the physical and social spaces and places that allow people to engage and connect with others and their surroundings. It is "integral to the urban fabric", and "refers to the networks of spaces, facilities, institutions, and groups that create affordances for social connection." to the built environment[6]

Recently, people have recognized social infrastructure's role in creating thriving communities. It includes a wide array of program types including parks, recreation and community centers, libraries, childcare centers, schools, health care facilities and public transit. When communities prioritize and construct well-functioning social infrastructure it contributes to an overall sense of belonging and can prove beneficial for residents who take advantage of the social opportunities it creates. As various scholars have shown, social infrastructure is essential to the urban fabric as it supports health and wellbeing, economic opportunity, lower crime-rates; all while lacking the same revenue streams as critical infrastructure[7,8]. Despite the benefits created by social infrastructure, funding for it is often insufficient.[9].

INTERTWINING CRITICAL AND SOCIAL INFRASTRUCTURE

Susan Rogers defines the term thick infrastructure as "the expansion of public works projects to include elements that enhance civic and public spaces or the adaptation of existing, single-purpose infrastructural landscapes into more robust, multifunctional systems." She proposes that "infrastructure transform, (thicken), to merge public investments with the goal of enriching diverse communities"[10] . This springs from the notion that infrastructure need not be monofunctional. Envisioning it as an integral part of the social fabric of a city while still meeting the critical needs of a society is a more efficient use of resources. As Rogers states, it can replace the "single-purpose, engineered, and disconnected infrastructural landscapes." This would allow it to contribute to the notion of belonging and a sense of place.

In approaching infrastructure in this manner, it begins to shift from something historically resulting in divisions within communities[11], to one which might begin to reconnect them. Overlapping critical infrastructure with social infrastructure ensures that the former prioritizes the social aspects of the places it occupies. Overlapping these programs creates as much of a benefit by what it does not do, (i.e., disrupt the social balance of disadvantaged communities through the creation a monofunctional interventions), as what it does (contribute to a sense of community).

Considering critical and social infrastructure in this way can help create a sense of belonging as Roberto Bedoya describes it, when he writes that "social networks help do this as a form of community cultural development by building narratives at a range of scales".[12] Through civic activities that bring people together, intertwining social infrastructure with critical

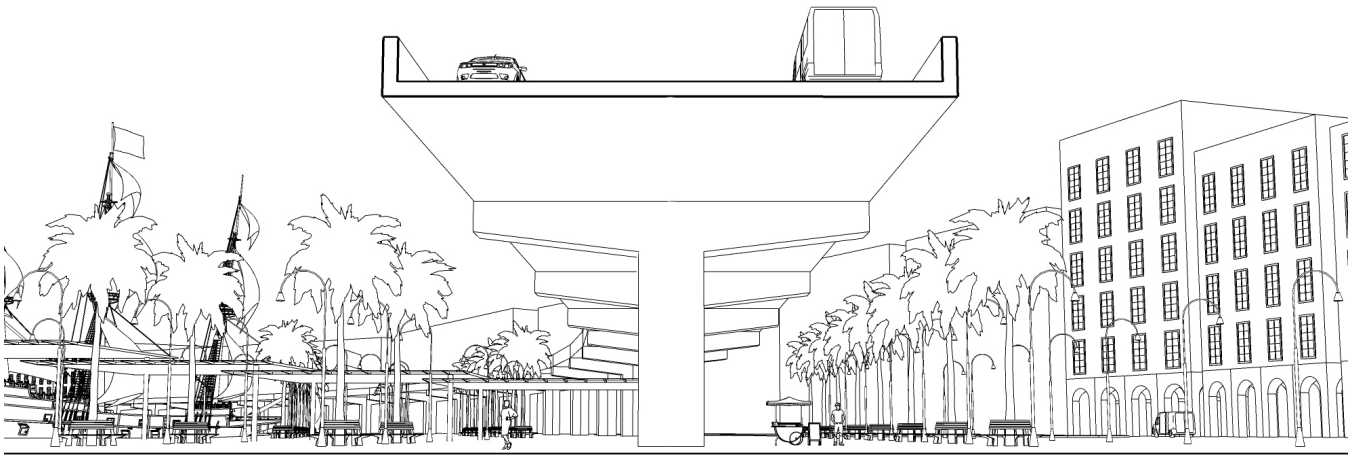

Figure 1. Example of Student Assignment 1: Sopraelevata Aldo Moro above the Porto Centro in Genoa Italy. R. Sproull.

infrastructure can help to build the local community and create civic pride.

TYPICAL METHODS FOR ESTABLISHING CRITICAL/ SOCIAL INFRASTRUCTURE

Considering the three scenarios that result in projects overlapping critical and social infrastructure described above, a common method for providing them is through enhanced public works projects. Like large scale single function infrastructure projects, governments often must provide these overlapped versions due to cost and complexity. As Brett Frischmann notes in Infrastructure Commons in Economic Perspective, "Two generalizations about traditional infrastructure are worth noting...First, the government has played and continues to play a significant and widely–accepted role in ensuring the provision of many traditional infrastructure projects"[13] , and that "traditional infrastructures are generally managed in an openly accessible manner". Just as government has assumed a significant role in ensuring the provision and management of traditional single-function infrastructure, it has also done so with multi-functional projects that braid together critical and social functions.

A potential shortcoming of infrastructure-scale projects provided through government processes could be the top-down approach to design. Because of this, users may or may not be provided with what they need. In typical critical infrastructure projects, need is understood, electrical grids provide power, roads provide mobility, etc. However, with social infrastructure, needs can be much more community specific. Libraires for example become much more than repositories for books. They serve their communities by providing information on all sorts of topics and providing opportunities for interaction across a wide spectrum of activities[14]. Due to specific community variations in program requirements, this "thickening" of the program can face uphill battles related to increased funding, red tape, or public backlash, and the 'extra' program is often the first element 'value-engineered' from a project.

COMMONING AS A METHOD FOR CREATING SOCIAL INFRASTRUCTURE

Counter to the typical methods for their conception would be a bottom-up approach whereby a sense of community ownership can be inherently engrained in critical/social infrastructure. Towards this end, commoning, (the grass roots collaborative effort of a community to meet its needs), can be a viable alternative method for the creation of these enhancements. There already exist precedents of critical/social infrastructure evolving out of the commons. Chicano Park in San Diego and FDR Skate Park in Philadelphia are lasting examples of this process. In both cases, communities 'thickened' existing infrastructure to include social program in the residual space left after cities completed interstate highways.

Chicano Park makes up the heart of Barrio Logan. Situated in Logan Heights, (San Diego's oldest Mexican American neighborhood), this piece of social infrastructure establishes a geographic and creative center for the residents of the Chicano community. Prior to World War II, Barrio Logan was a "self-contained enclave'[15] connected to San Diego's southwestern waterfront, however the need for the naval base during the war and the following urban renewal projects severed the neighborhood from the water[16]. Community led construction on the park, sometimes referred to as 'the takeover', was begun in 1970 when community activists fought to reclaim an abandoned lot beneath the San Diego-Coronado Bridge that had been planned as a new California Highway Patrol Office. Initial work consisted of minor landscape improvements, but the jewel of the project, the Chicano Murals, gained significant momentum in 1973. This was when teams of artists began work to create the collection that still exists today and

Figure 2. Comparison of the Peacock Tract, The University of Alabama's Cartographic Research Laboratory

represents one of the largest concentrations of Chicano Murals in the world. The park now contains more than 80 paintings on seven acres and is dotted with sculptures, gardens, picnic tables and playgrounds. Every year, the park hosts culturally significant music festivals, the biggest being Chicano Park Day held each April. Because of the magnitude and historical significance of the murals, the park was designated an official historic site by the San Diego Historical Site Board in 1980. Since its establishment, the park has become a symbol of pride for the Chicano community [17].

Another lasting example of Social and critical infrastructure being born out of the commons is FDR Skate Park in Philadelphia. It lies adjacent to, (but is only loosely associated with), its larger cousin FDR Park which was designed by the Olmstead Brothers in 1913. The larger park grew multiple times over the last century taking on the name Franklin Delano Roosevelt Park during the 1940's and seeing the addition of the skate park in 1996. It totals approximately 16,000 square feet of space and lies directly under Interstate 95.

The skatepark, has been and continues to be funded, maintained, and built almost entirely by the skateboarders and the skateboarding community of Philadelphia[18]. The only oversite that the city has for FDR Skatepark are the hours of "official" operation. The city embraced this laissez faire approach with the understanding that anything constructed as part of FDR skatepark cannot be built below the current ground level and cannot interfere structurally with any highway support elements. The result is a multitude of concrete bowls, ramps, and rails, that amount to a skater's paradise[19]. This space was set aside previously by the city as a simple asphalt slab with a wood half pipe to solve the "problems caused by skaters" at Love Park. Enhancements to the original design began about 18 months after the opening, when skaters, inspired by another do-it-yourself installation, Burnside Skatepark in Portland, decided to improve the concrete landscape. For the past 28 years, FDR Skatepark has been a consistently expanding skatepark. It has also become a cornerstone in the global skateboarding community, with documentaries and books produced to record its evolution.[20]

FDR Skatepark and Chicano Park are only two examples of the commons providing a meaningful, strong, and enduring social infrastructure in the remnant spaces of realized major critical infrastructure projects. They demonstrate two communities' abilities to maximize their ingenuity and creativity through design in pursuit of spaces that provide them a sense of belonging.

METHODS OF INVESTIGATION

These compelling precedents coupled with the three methods for combining critical and social infrastructure inspired a project investigated in a course titled Research and Civic Engagement taught in Auburn University's Environmental Design Program. Specifically, it looked at the Peacock Tract, a neighborhood in Montgomery, Alabama that has a complex relationship with infrastructure.

Originally a 300-acre plantation just south of downtown, the Peacock Tract was a place where enslaved people worked the land[21] . After the Civil War, the Peacock family sold the property to developers, and it became one of the original communities

Figure 3. Mapping the Immeasurable; Left to right: Tia WIlliams, Emma Parrish, Alexandra Toney

for freed African Americans. Some of the first institutions established were the historic African American churches, (many of which still exist today). Over the years the Peacock Tract grew to a robust middle-class community containing almost every type of business needed to be self-sustaining. It became a center of civil rights momentum when the Peacock Tract, "once a place of enslavement was transformed into the birthplace of a movement that would change the world".[22] The churches in this community provided the setting for the election of Martin Luther King as leader of the Montgomery Improvement Association, multiple community votes creating and extending the city bus boycott, and the final rest stop on the Selma to Montgomery March. Even with this significance, (or perhaps because of it), the neighborhood was deliberately targeted by state officials through an act of retribution when they attempted "to change the racial landscape of post-war American cities"[23] by locating the I-65/I-85 interchange in its heart.

The introduction of interstates in Montgomery's African American neighborhoods displaced 1,859 families from the Peacock Tract and surrounding communities and shuttered seventy-four small businesses[24]. The current state of the neighborhood indicates the toll the interstate has taken on it[25]. Historically this place has oscillated between infrastructure's benefits and detriments. As a plantation it was a part of the critical food and agricultural infrastructural systems of the city and region, but any benefits associated with this function were obviously nullified by its enslaved workforce. State officials intentionally positioned transportation infrastructure to dislocate and quarter the neighborhood into multiple zones disrupting the social life of the place[26,27]. However, the neighborhood's social infrastructure, was part of the founding of the community that eventually became one of the birthplaces of the civil rights movement. Infrastructure in this place has been both inspiringly beneficial and profoundly destructive for its residents.

RESEARCH AND CIVIC ENGAGEMENT

Students in the Research and Civic Engagement course specifically investigated infrastructure and its effect on this place. Their work manifested itself in three major projects. First, students researched critical/social infrastructure case studies from a curated list. Projects ranged in scale from a modest pedestrian bridge to large scale highway/park overlaps. Each student was required to produce a section perspective of their assigned project. Students were limited in their freedom for artistic expression as these drawings were intended to be analytical and prosaic. (See Figure 1). Second, students were assigned a field studies assignment that asked them to measure the site in what is typically unmeasurable terms. Rather than asking for data to be presented, the focus was placed on narratives about the Peacock Tract. Relative to the first assignment, this exercise resulted in counterpoint drawings where students attempted to understand the neighborhood in a meaningful way. (See figure 3). Finally, the semester culminated with a design intervention at a scale of their choosing that could become a catalyst for change. Their work hinged on the question: If infrastructure can be a tool for division, how can it become a means of reconnection? Students optimistically approached the neighborhood, the highway, and its residual spaces as usable instead of a forgotten zones of disjunction found so often around large-scale infrastructure. In this new scenario multiple

Figure 4. Interior rendering of Mount Zion AME Church Exhibit

disciplines of design emerged as solutions including exhibits, interiors, buildings, landscape, planning, and public art.

Student work tended to mimic existing projects that navigate landscapes remaining after government entities construct interstates through them. Chicano Park and FDR Skate Park served as strong examples of how to incorporate social infrastructure around these existing constructions. Scales of projects ranged from small signage that acts as a 'beacon' to large scale restructuring of the city. However, some projects explored other programs and scales of social infrastructure that when envisioned might contribute to a way forward for the community.

Evanthi Hettiaratchi's and Katie Carnes' projects both explored how exhibit design might highlight the incredible human narrative of the people of the Peacock Tract with specific attention given to the fact that even within such significant historic events, it is everyday citizens that act out the story. The exhibit was intended to reside in Mt. Zion AME's previous church building which is being converted to a museum through grants and money raised by the congregation and community.

Hollen Terry's project, Mapping Reverence, explores the creation of a temporary site-specific environmental installation, to raise awareness of the Peacock Tract and promote reconnection. Terry begins her work with a mapping of all the razed properties in the community caused by the interstate. Within this space, (much of its highway right of way), she proposes to recreate 'ghosted' forms of all the structures by reconstructing them from light metal skeleton frames or recreating their footprints on the ground in either paint or flower plantings depending on specific locations (see figure 5). The color palette for the project stems from the last Sanborn maps of the area that indicate the robustness of the neighborhood prior to the construction of Interstate 65. The project is intended to be temporal as it creates a neighborhood scale gallery space.

During ongoing discussion, methods of provision became a recurring topic. Students proposed the exhibit space funding could come through donations, grants, and sweat equity while the land art exhibit could materialize in a manner similar to that used by artists creating similar work. The projects begin to present a case that for some social infrastructure projects, a viable means of creating them is through the commons rather than as a public works project. This is in part due to the bottom-up approach inherent in projects originating in the commons. Because of this, the effectiveness of organic community investment inherent in this method establishes a more enduring presence for the people and places they serve.

OUTCOMES & CONCLUSIONS

In evaluating the student projects relative to the case study work completed earlier in the semester a few notions were realized and discussed. First, the Peacock Tract is a large place deeply affected by both critical and social infrastructure. While

Figure 5. Mapping Reverence. Hollen Terry.

the student projects presented here show opportunities for commoning as a means of recombining separated areas of the community, the reality is that large scale robust interventions with goals of reconnection can be difficult to complete successfully solely through the commons. Of the three typologies of overlap between social and critical infrastructure presented here, the most conceivable means of including commoning as a tool for development are the scenarios that add program to the critical infrastructure while it is still in use or after it has become obsolete.

For robust projects that try to re-establish physical connections across a major interstate, a more appropriate design solution may typically be created through public works projects. The type of construction, logistics of allowing the infrastructure to possibly continue functioning, and the bureaucracy involved in such a project make these interventions less plausible through commoning alone. While these large types of projects were envisioned by students, much of the work of the class speculates that a better way to serve the Peacock Tract community is through catalytic projects more restrained in program, scale, and duration that inspire future public works projects. This grass-roots approach has proven successful with Chicano Park and FDR Skatepark where small initial acts of community engagement led to much larger outcomes. In the case of the Peacock Tract, using the commons as a method for telling the story of the community, (through a museum exhibit or an environmental land art installation), is a plausible means for raising awareness of the community's history and drawing attention to its current economic condition.

> "The people who shape communities from the ground up—the urban residents who practice the art of poiesis or making in the sense of transforming the world—should have the real agency. Acts of imagination ultimately shape the public sphere, where we make meaning together, in shared space. Imagination produces a "common" that is continually generated and mutated through our actions."[28]
>
> Roberto Bedoya, *Poetics and Praxis in a City of Relation*

Bedoya's quote highlights the true value of operating through the commons. The 'common' he talks about is unique in that it represents a shared yet constantly evolving vision for a community. It can provide inspiration to the people who live in places affected by critical infrastructure and help to provide the agency to re-shape them. This promotes emotional and creative investment of the residents in those places. Such has been the case with many examples in the past; Chicano Park, FDR Skatepark, The Highline in New York, and the Beltline in Atlanta.

As more cities build new infrastructure projects that overlap the critical with the social (or transform existing projects into these intertwined programs), it would be beneficial to the communities wher they exist to involve the people who make up the collective commons of the place in the process. Their inherent investment in their own neighborhoods and cities means they will demonstrate the most valuable vision and potent creativity, and agency over this process is best suited to be in the hands of those who exist with these infrastructures every day.

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