



BOTTOM-UP SOCIAL CHANGE

MATERIALS
BUILDINGS
COMMUNITY

2019 INTERSECTIONS SYMPOSIUM

American Institute of Architects
Association of Collegiate Schools of Architecture

2019 INTERSECTIONS SYMPOSIUM

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Symposium Co-chairs:

ELIZABETH GOLDEN, University of Washington

JOSHUA VERMILLION, University of Nevada, Las Vegas



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BOTTOM-UP SOCIAL CHANGE: MATERIALS | BUILDINGS | COMMUNITY

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“We are currently witnessing the largest wave of urban growth in human history. The nature and scope of this shift varies across the globe, but economic development and consumption are altering the quality of life for city dwellers and rural communities, bringing disproportionate prosperity to some, while increasing inequality for many.”
—Bottom-up Social Change, Call for Abstracts

The intent of the 2019 Intersections Symposium was to explore the strengths and weaknesses of bottom-up social drivers as catalysts for development, growth, and transformation of the built environment, and to understand the ways in which these interventions can be more equitable, inclusive, affordable, and sustainable. What we learned from the symposium participants is that architects, educators, and students can and should play a significant role in catalyzing change within their communities, however, they must remain cognizant of their often privileged position when responding to collective needs, as the concepts of ‘bottom-up’ or ‘top-down’ can shift based on one’s own ideological or socio-economic vantage point.

As cities expand and densify, urban systems are more relevant than ever before, and these networks will determine how effectively resources are utilized in the future. Urban infrastructure projects are often vast, expensive, centrally planned endeavors; however, this typical top-down frame of reference is challenged by a number of projects included in this publication. Small-scale, locally driven solutions can be more effective and responsive to rapidly changing demands shaped by climate change and urban development, and as municipal governments and others recognize and support the power of these types of interventions, the boundaries between the top and bottom are blurred. Courtney Crosson describes this shift in her essay “The Ensuing Flood,” where she argues for a decentralized network of flood mitigation in Tucson, Arizona informed by contributions from community stakeholders, city and county staff, and architecture students. Students (or “citizen architects”) act to bridge between neighborhood groups and the city by providing design services the municipality cannot cover due to budgeting and staffing constraints. This example, and others like it in the following chapters, equips us with a replicable model for identifying social investment opportunities that can contribute to healthier, more sustainable and resilient communities.

Many cities are contending with displacement caused by urban development. Supporting community conversations around change and providing a platform for mobilization and involvement is oftentimes as or more important than simply constructing physical space. The Parasite Skatepark, a project led by the Albert and Tina Small Center for Collaborative Design at Tulane University, is one such example that “builds power” by supporting existing capacity within the neighborhood where it is located. The Small Center assisted local skaters in advocating for and planning the Peach Orchard, a guerrilla skate park. Thanks to these efforts, the grassroots public space is now New Orleans’ first official skate park, run by Transitional Spaces, a skater-organized nonprofit organization. The Small Center, and the other community design centers represented in this publication—the Center for Public Design at Portland State and the Detroit Collaborative Design Center at the University of Detroit Mercy—demonstrate the potential for organizing and empowering individuals to take action within their communities.

Finally, a number of our authors have put forward innovative strategies for bridging competing constraints and interests when contending with the complexities of urban development at both ends of the social policy spectrum. This is perhaps best exemplified in the piece, “Density: Innovation in Practice,” where Angie Brooks describes how her firm, Brooks + Scarpa Architects, finds design opportunities in negotiating public policy and politics, developer interests, and community needs. Her observations point to a

professional model that responds to the public interest much more nimbly and flexibly than laws and codes, and advocates for architects to take on a larger role in crafting policy decisions that allow for growth and affordability without compromising design quality.

Reflecting upon the symposium submissions, we are well aware of who is missing from our conversation. Without those voices, we cannot truly represent or speak for urban or rural communities of color or economically disadvantaged individuals; the very people who are the most vulnerable to the challenges we describe in the symposium call. We acknowledge this shortcoming and preface the work by noting that there are blind spots. However, we must begin somewhere, and be prepared, as architects and educators, to participate in difficult conversations about the “right way” to engage communities and the issues affecting them. It means asking critical questions and showing a willingness to be uncomfortable when working in an environment full of ambiguities—the “messy reality” Rick Mohler describes in the concluding piece for this publication.

ABOUT THE SYMPOSIUM

The American Institute of Architects (AIA) and the Association of Collegiate Schools of Architecture (ACSA) are pleased to announce a partnership dedicated to the INTERSECTION of Education, Research and Practice. Through a series of educational sessions at the 2019 AIA Conference in Las Vegas, we will feature exemplary research projects which address issues related to our Symposium theme: **BOTTOM-UP SOCIAL CHANGE: Materials | Buildings | Community**. Join us at the 2019 AIA Conference on Architecture.

We want to thank our co-chairs Elizabeth Golden and Joshua Vermillion; our moderators: Bryan Bell, Dan Maginn, and Katie Swenson; our presenters: Sergio Palleroni, Courtney Crosson, Tadd Heidgerken, Emilie Taylor Welty, Hans Herrmann, Richard Mohler, Sharon Haar, and Elizabeth Timme along with their co-authors and students. Without their contributions, there would be no Intersections and sharing of this important work.

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CHAPTER ONE

COMMUNITY CONNECTIONS: INCLUSIVE STRATEGIES FOR URBAN INFRASTRUCTURE

How can architects use inclusive strategies to provide valuable services on urban infrastructure projects?

One of the advances in architecture that has been well documented over the last ten years is the effectiveness of social engagement in the design process. Firms like MASS Design are winning commissions and awards, not for their long list of buildings or years of experience, but for their process of inclusion and participation. The alternative to this approach, top-down decision-making, has been shown to miss important objectives or achieve goals that are not of great value. In both cases, resources and efforts are applied to inappropriate design solutions and are wasted. This is especially true of large-scale infrastructure projects, which are notoriously top-down and heavy handed.

We are at the start of a paradigm shift in urban infrastructure projects, from a consolidated planning approach to de-centralized inclusive processes. As is often the case, these early pilot projects occur as collaborations between the public sector and academia. The two examples in this chapter show how significant regional issues—transportation and water—are not beyond the scale and scope of architects to address. The first project, led by Courtney Crosson at the University of Arizona, shows how expensive, centrally planned endeavors can be transformed into medium scale, contextual design responses. The second project, led by Sergio Palleroni from the Center for Public Interest Design at Portland State, shows how small-scale neighborhood interventions can be scaled to address wicked problems of employment and health.

The following case studies translate to similar solutions for urban challenges in other communities. Decentralized urban systems provide architects with new opportunities for social and environmental impact at site and district scales, and have the potential to expand the agency of professional architects to implement positive change. This approach creates new opportunities for architecture firms to serve their community by addressing critical needs and expand their services.

BRYAN BELL, Assoc. AIA, Executive Director, Design Corps; Associate Professor, North Carolina State University; and Co-Founder, SEED (Social Economic Environmental Design) Network
DESIGN CORPS

Public Transportation Design as Grassroots Pedagogy

SERGIO PALLERONI, Professor and Director, Center for Public Interest Design
Portland State University

In the spring of 2014, the Center for Public Interest Design (CPID) was approached by the Sacramento Area Council of Governments to begin the process of exploring how public interest design could be used to address the needs of some of Sacramento's most disinvested and environmentally impacted neighborhoods. This collaboration began at a crucial time for California as the State was in the process of implementing the first cap and trade legislation in the US. A significant percentage of funds collected through the sale of carbon tax credits associated with this legislation are required to be invested in disadvantaged communities. This paper proposal examines the potential for design to play a role in identifying social investment opportunities to create healthier communities through the CPID's work with students in Central California.

In the course of nearly five years the work of CPID for the Councils of Governments in California to engage the new carbon reinvestment legislation has led to a focus on transportation design. Access to food, health care, education, and recreation, now standard public health metrics to a healthy and productive life, have emerged as the key goals of the reinvestment act. Access to public transportation is currently not equitable in much of California and often reflects more the economic and political assets of the community rather than need. In an effort to distribute the impact of the carbon tax to those in need, and build the political capacity of these communities, CPID's efforts have focused in the last two years to the creation of guide, and case studies, for future community transportation stations that serve as needed assets, and are co-produced by the stakeholders of each community in collaboration with design professionals and state agencies. The guides act as both a framework by which architects, engineers and transportation systems can involve communities in the process of a design that reflects their community and needs, as well as thought frames for changing the perception of communities and local transportation systems on the role that these stations can play in the community (ie. The bus station as community center).

With fieldwork now an accepted and broadly embraced form of pedagogy in Schools of Architecture the experience of CPID offers a model of engagement that has not

been significantly developed within the academy but offers promise. Every community in the US and North America in general has a transportation system, and many are in need of updating and reconnection to the communities they serve. As such this offer academics an opportunity for community engagement and public interest design as well as and course pedagogy in a range of subjects areas ranging from tectonics to material systems and human centric design that addresses all ability levels. The presentation will both share the strategies and methods of engagement as well as the lessons learned in the process of both changing perceptions and attempting to build the first of these station for communities in need.



Figure 1. Bus Station as Community Center Del Paso Heights (CPID)

ACTORS

The Center for Public Interest Design (CPID) is a research, education, and community design center whose mission is to investigate, promote, and engage in inclusive design practices that address the growing needs of underserved communities worldwide through sustainable methods. Based in the Portland State University (PSU) School of Architecture, the CPID fosters opportunities for transdisciplinary collaboration among faculty, professionals, community members, and students. CPID faculty Sergio Palleroni, Todd Ferry and BD Wortham-Galvin began working with the Sacramento Area Council of Governments (SACOG) in the Spring of 2014 to begin the process of exploring how public interest design can be used to address the needs of some of Sacramento's most disinvested neighborhoods. The goal was to use the power of design to promote healthier and more equitable places and people, through within the funding parameters of the cap and trade legislation that was in 2014 beginning to become available to disinvested communities.

CONTEXT

Immediately prior to the CPID beginning its research and building its relationship with potential collaborators, there was an ad campaign emphasizing the disparate life expectancy of Californians based on where they live within the state. The campaign was an effort of the California Endowment, a non-profit focused on improving the health of Californians, to raise awareness about inequality in the state (1).¹ The billboards and print ads compared two different places, providing a zip code and average age of death in each, accompanied by the question, "Did you know your zip code is a better predictor of your life expectancy than your genetic code?"(2). This provocative question is supported by research that substantial differences of as much as a decade or more in life expectancy can be found in areas just a few miles from one another, including in Sacramento.

This revelation about zip codes as predictors of health underscores unsettling realities of our growing income inequality in the US, and was highlighted in a report published by the American Human Development Project titled *A Portrait of California 2011* (Burd- Sharps and Lewis, 2011) (3) This report uses the American Human Development Index to provide a framework by which to evaluate the success of a population outside of conventional monetary-based metrics, such as GDP. While health is just one of three major categories in the human development index, the others, access to knowledge and standard of living, also have a direct impact on health outcomes. These collectively indicate that one's zip code is indeed a primary determinant of health(4).

While extreme inequities underscored in the report due to factors such as race and ethnicity, gender, nativity, and geography impacting the socio-economic and environmental conditions were disheartening, Californians concerned with

social justice were finding new cause for cautious optimism. In 2012, the Legislature passed Senate Bill 535 and Assembly Bill 1532, requiring State and local agencies to invest in and improve disadvantaged communities using funds from the Greenhouse Gas Reduction Fund (GGRF). Commonly known as cap and trade strategies, this program places a limit, or cap, on greenhouse gas emissions by issuing a limited number of emission allowances (equal to the limit that will be reduced progressively) to sources responsible for 85 percent of the total emissions in California. The California Air Resources Board now conducts quarterly auctions for available allowances, with revenues from these auctions collected in the GGRF.

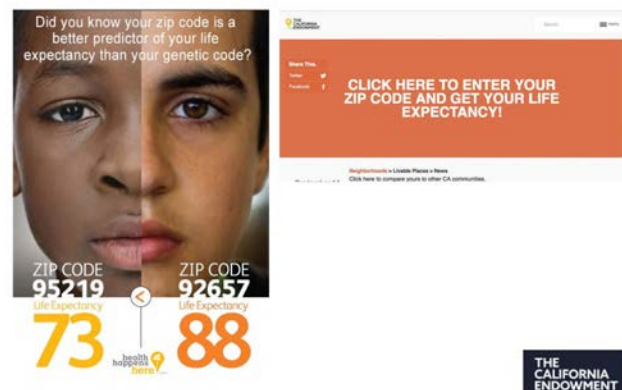


Figure 2. Portrait of California Ad and Website

Of the several billion dollars in annual proceeds from this initiative, this legislation states that a minimum of 25 percent of proceeds is required to go to projects that benefit disadvantaged communities, with at least 10 percent of the total funds supporting projects located within disadvantaged communities. (In 2015, it was reported that 39% of all projects and \$356M were dedicated to disadvantaged communities, and the amount has grown yearly).(5) The goal of the funds are to improve public health, quality of life, and economic opportunity in California's most environmentally impacted communities, while at the same time reducing pollution that causes climate change. While the state had designated funding for disadvantaged communities in 2012, it wasn't until 2014 that the California Environmental Protection Agency (CalEPA) fully defined what constituted a disadvantaged community for these purposes.

CalEPA created the CalEnviroScreen 2.0 tool to inform their process of identifying disadvantaged communities by using a "science-based method for evaluating multiple pollution sources in a community while accounting for a community's vulnerability to pollution's adverse effects (CalEPA, 2014)."(6) Like the Human Development Index, the CalEnviroScreen tool acknowledges that traditional metrics of

evaluating environmental health impacts are often insufficient to tell the whole story, and socio-economic factors and other considerations were included in the evaluation made up of 19 individual indicators. This is a significant step in considering public health. As is noted in the report, “Existing research on environmental pollutants and health risk has consistently identified socioeconomic and sensitivity factors as ‘effect modifiers.’ For example, numerous studies on the health effects of particulate air pollution have found that low socioeconomic status is associated with about a 3-fold increased risk of morbidity or mortality for a given level of particulate pollution (Samet and White, 2004).”(7) The CalEnviroScreen tool provides a clear means to identify disadvantaged communities eligible for investment of cap and trade proceeds to begin addressing some of the inequities and determinants of health based on zip code outlined in A Portrait of California.

The driving question for the faculty and students at the Center for Public Interest Design entering this complex context was, “Is there a role for design to play in the creation of healthier communities through a participatory process that identifies opportunities and provides visions for strategic investment in Sacramento’s under-served communities?”

ON THE GROUND

CPID and SACOG began their collaboration in the spring of 2014 with a listening tour, meeting with stakeholders and community leaders in Sacramento’s most disadvantaged communities. Following an intensive period of research, stakeholder meetings, and site visits, the team identified two ideal community partners in the neighborhoods of Del Paso Heights and South Sacramento. The community organizations in these neighborhoods (Mutual Assistance Network in Del Paso Heights and La Familia in South Sacramento) had incredible leadership, the trust of their communities, and the desire to pursue projects together, all qualities needed to support a successful effort.

The two neighborhoods differ from one another significantly enough in demographics, geography within the city, and specific concerns, while sharing similar challenges like, lack of education, underemployment, and violence, that together they can inform design systems that are flexible and able to be employed in a range of neighborhoods throughout the city. South Sacramento is predominantly Latino, while Del Paso Heights has a larger percentage of African American and Asian American citizens. A goal of developing potential design systems within these neighborhoods would certainly have to reflect the cultural richness in these areas and not simply propose a generic one-size-fits-all solution.

CPID faculty developed a series of strategies for engaging the community and approaching the issues that emerged as being most crucial to addressing environmental and economic marginalization they suffered. This framework established a method of:

- Multi-stakeholder participation through an open, transparent, and iterative design process.
- Integration of physical, social, environmental, and economic strategies in single interventions, recognizing a need to think beyond individual structures to include design of programs, processes, and enterprises with the help of a multi-disciplinary team.
- Networked interventions of small-scale projects as catalysts and strategic elements to inform larger community goals.

These strategies were brought into studios at PSU’s School of Architecture beginning in the fall of 2014 where studios were taught concurrently by project faculty over the next four years. The studios consisted of fourth year undergraduates students engaging urban design and graduate students looking at urban design, architecture and tactical urbanism, resulting in at times up to 45 students working on the initiative per academic period. Students had the opportunity to travel to Sacramento and meet with community leaders, government officials, and project stakeholders, with grant support, before beginning the process of proposing design responses. A series of mapping exercises documented assets and challenges in the neighborhoods, informed by community engagement activities. In Del Paso Heights, for example, students set up engagement tools aimed at understanding and documenting community hopes and concerns at the neighborhood’s annual Harvest Festival (the most well-attended community event of the year), a tradition the CPID has continued in subsequent years.

DESIGN

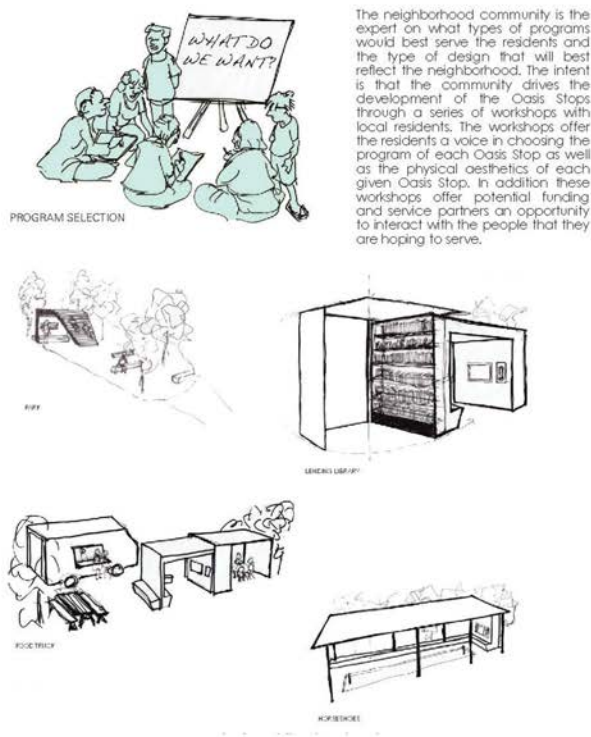
The design responses in this first studio ranged from transportation systems to allow communities to better connect to needs, to recreation centers and business incubators, to street improvements and systems of occupying vacant lots with pop-up shops. Ultimately, the project partners have chosen to move forward with several strategic ideas that were developed in the studios, including the design of a series of bus stops which explored the possibility that a bus stop could double as a micro community center, or facility addressing other pressing community needs. The bus stops seek to take advantage of funding available for transportation systems through cap and trade proceeds, while responding to community desires for spaces and amenities that might not yet be achievable at a larger scale. For example, one early bus stop proposal by PSU graduate student, Nicole De Jong envisioned a core bus shelter that remained in place while a metal screen shell extends to create a secondary space of equal size to be programmed by the community, such as a place for local entrepreneurs to sell food and crafts, an outdoor classroom for a local youth group, or a safe gathering space (see figure 3). We see this approach as a strategic way to begin working with community members on specific interventions that can serve as a proof of concept for other investment.

Following these initial design studios, CPID staff, students, and interns have continued to explore opportunities for design to play a role on a variety of scales, including further developing concepts for tactical bus stops, and more recently light rail stations on the regional transit system. The design strategies for the bus stops emphasize a fully participatory process with the community, and have ranged from a kit of parts that allow the community to choose the elements they would like in their neighborhood, to a system of building the stops with the community using reclaimed materials found within the area. The bus stops address issues of safety, environmental impact through increasing choice ridership of public transportation, enhancing community identity, and responding to the need for various community amenities. While we are developing a system for dozens of these bus shelters to be designed, funded, and built, we imagine that no two will be the same, reflecting the unique needs and character of each community. A significant reason for this is that the system the CPID is proposing empowers the community to take control of the project for themselves, and collaborate as co-producer, or curators of the design programming and design process with local designers and transportation firms.

TESTING THE PROPOSED PROCESS THROUGH PILOT APPLICATIONS

Starting in 2016 CPID was invited to design the first transit stops based on the model they developed with the communities and local agencies. Two types of projects were put forward as tests of the community design process developed in collaboration by CPID. The first, under a continuation of the SACOG contract were community based bus stations, one at Del Paso Heights, one of the two original pilot communities. The second for Knights Landing, a rural community in the Sacramento region for which the bus stop needed to be more than a bus stop but rather lifeline services to the community. Lifeline services are increasingly a concern for rural communities where the majority of the population are families, in towns too small to support their essential needs (education, a grocery store, and recreation for their children and families). CPID's proposal for rethinking the bus shelter as an important community institution and service has been seen by these communities as a potential solution to this isolation, offering to build facilities within the community as part of the community while offering a vital stop for the buses that provide lifeline services to these communities through a connection to larger towns with the needed resources.

COMMUNITY PROCESS: PROGRAM SELECTION



COMMUNITY PROCESS: SCREEN DESIGN

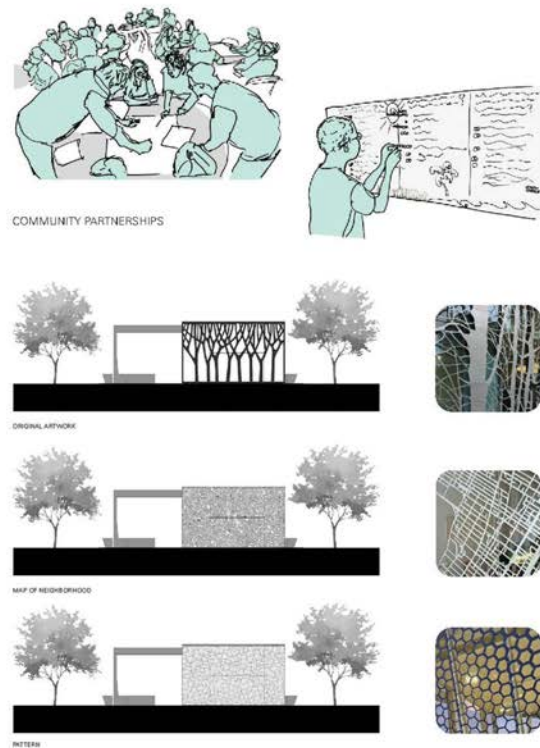


Figure 3. Bus station Proposed design process and opportunities

The Del Paso Heights bus stop will be completed as part of a larger urban redevelopment in the next few years. This stop will be placed on the site of another design studio investigation the CPID has conducted as part of this process, the creation of a competitive sports park in the area. The Del Paso Heights Sports Center (DPHSC) will serve as an economic generator by becoming a destination for hundreds of Californians outside of the neighborhood each weekend, and provide the valuable community amenity of a healthy and safe recreational facility that is desperately needed in the area. The bus stop will respond to community desire in its design while expressing the programmatic link of the DPHSC and the new Sacramento King's basketball arena downtown that are connected by the transit line.

These two first bus stop will test the larger system developed by the CPID, including the tools it has created to enable this process; a comprehensive manual that empowers communities to create their own transit stops, and an online tool that will provide opportunities for ongoing feedback about community desires, challenges, and opportunities, while documenting community needs to help stakeholders advocate for change. The online tool stems from the innovative work

of Madrid-based design firm Ecosistema Urbano who have created participatory web-based platforms for a “networked design” approach on projects like Dream Hamar in Norway (Ecosistema Urbano, 2012). The firm has helped the CPID adapt one of these web-based tools for use in Sacramento, called With Sacramento. Consistent with the CPID’s practice, the tools and systems developed during this process are intended to be expanded throughout Sacramento and beyond if proven to be successful.

This methodology, and approach, to guide participation by the disinvested communities targeted by the cap and trade legislation, was embraced by SACRT, the regional transit system, that in 2016 hired us to take this early work and transit guide and produce three light station designs based on our methodology. The first opportunity has come in the form of the design of the Dos Pasos light rail station. The station is a gateway facility to the Sacramento Rail Yards redevelopment project. The project is the largest urban development project in US and the station marks the symbolic entry to Sacramento. The redevelopment is potentially displacing several low income communities that have a long history in the area. Though they were offered the opportunity to be



Figure 4. Dos Pasos Station design.

first to receive the affordable housing being developed by SACOG and developers, many residents did not trust either the city or the developers to deliver on their promise and were contemplating moving out of an area that has been their home for generations. The CPID process therefore not only included them in the design process of the Dos Pasos station that will be added to their community but also in additional programming the station could provide to enhance their perceived needs and entice them to stay. Following the model of the 'bus station as community center', that has guided our bus transportation work for the region, the light rail station was designed to address essential needs currently missing as identified by the resident community. SOCOG, Sacramento's government agencies involved in guiding the larger scale urban development project of the rail yards, and architects representing the developer of the future housing at the station have also been included throughout the process. This coming to the table of the multi-stakeholders and agencies and developers, a process that was curated by CPID, has created a transparency of process, and intentions, that has led to agreement on programming that has challenged the traditional notions of what constitutes a light rail station, and its role in urban development. One interesting outcome has been rethinking by the developer and city agencies of what is expected and should be included as amenities and facilities in the new housing adjacent to the station. The housing as a result of discussions between stakeholders been rethought of as an integral part of the station. The new station concept and design will jointly be offering space for both permanent and flexible programming community events and needs. These range from social vital social services needed by the resident community that will be accommodated in the housing's ground floor at the station, bike share programs, gardens, and flexible space able to accommodate fresh produce markets and cultural events. They will also include, for the first time in a generation, public bathrooms. Public bathrooms have become a contentious issue in public space development in California and nationally, both for their maintenance costs and the unwanted activities and users they can attract. But bathrooms are often a necessary need for both the community and those traveling long distances to work on the transit system. The public process that was developed during the charrette exchanges and activities eventually led to a consensus that was even supported by the business community in the area, who finally in conversation with the community for whom the bathrooms were an essential need realized the importance of offering this service to public.

The symbiotic relationship developed between the station and the housing extended to the use and sharing of solar energy, shared intermodal transportation options offered (for instance bicycle and car share programs charged by shared microgrids of solar power), and rainwater catchment systems feeding planting shared both by public and private

developed spaces. This more enlightened view of what a station can offer and contribute to the public realm led to the station finally after many years, receiving a 21 million dollar grant from the State's cap and trade program, the first light rail station to receive funding under the program. Cited in the award was both the just mentioned synergy between station, public space and housing, as well as the support across stakeholders created by the process. What the process provided was a vision and consensus that was not possible by the established methods and procedures Sacramento had for development and transportation projects public process, and one in which all stakeholder of the project participated, and in doing so felt ownership of the results. (fig. 4)

CONCLUSION

The Center for Public Interest Design's work in Sacramento represents an investigation into how designers might intersect with government agencies and community organizations to identify opportunities for strategic projects in disadvantaged communities funded through legislative initiatives. By working with stakeholders, the CPID has been able to propose interventions that amplify community voice in an effort to improve community and environmental health. By incorporating the work into architecture studios, students have learned to become more conscientious designers by involving the community in the process. The type of legislation being leveraged represents a significant opportunity for designers to apply their skills toward positive social impact in underserved communities. The approach of the CPID has been extremely well-received in the area, and the Center was able to expand its role in Sacramento through a partnership with Sacramento Regional Transit, and other regional transit authorities, on the design of several light rail stations and bus stations in underserved communities. While working with governmental organizations to identify opportunities for projects in historically marginalized communities made possible by funding available through complex legislation is not without its challenges, there is a significant need for designers to contribute to the process in order to make healthier places and people. When major developments in policy present themselves in situations like the creation of California's massive cap and trade program, designers need to be ready to use the power of design to ensure that the ensuing investments from these policy changes are made with meaningful vision, intent, and the co-authorship of stakeholders whose lives these investments will impact. As the work we have conducted for SACOG and SACRT has shown these participatory design processes can lead to additional outcomes and opportunities that might not be possible through traditional public processes. In these projects these additional opportunities and funds have benefited both the target communities and the public agencies sponsoring this work.

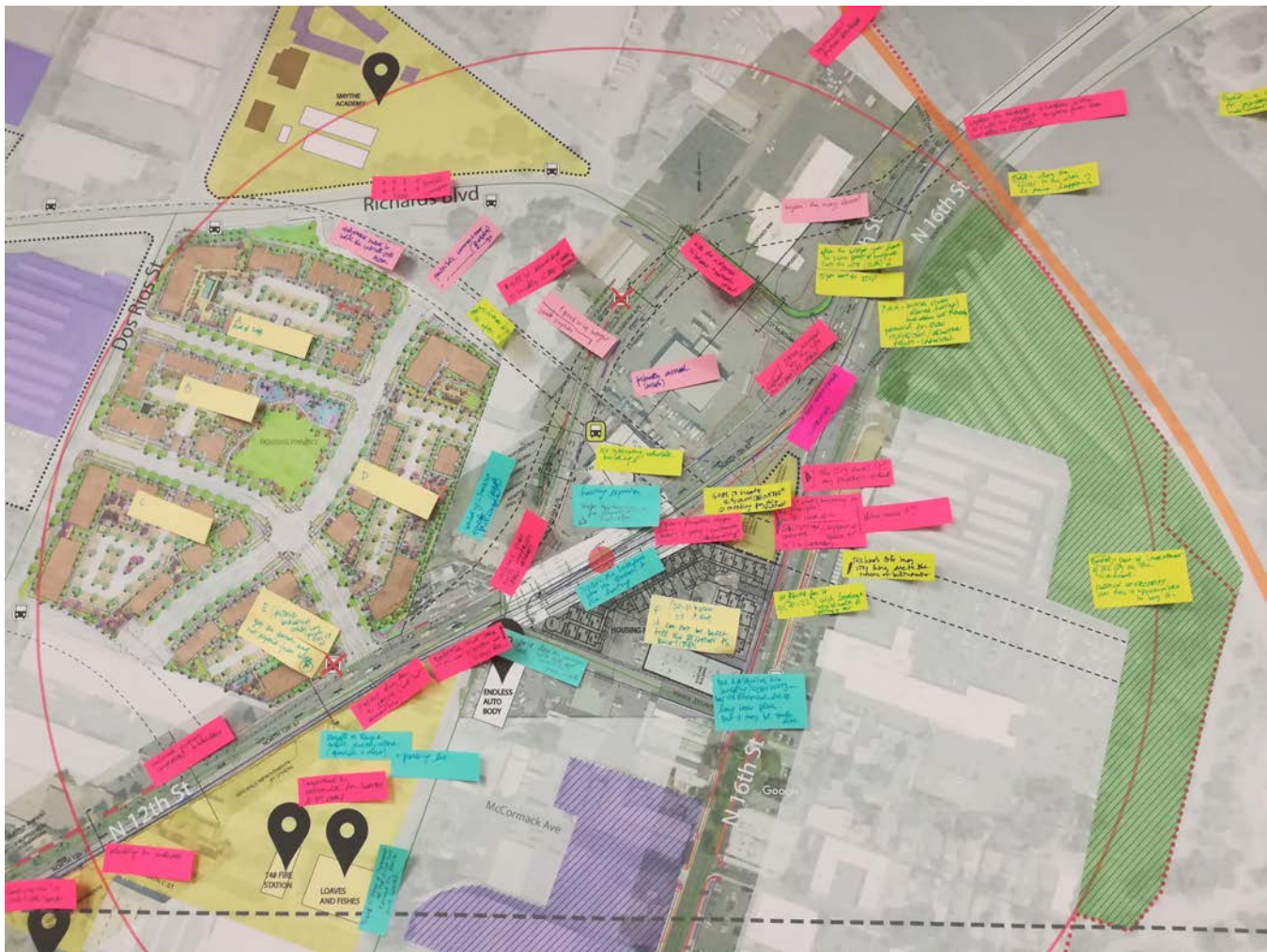


Figure 5. Mapping of agencies shared opinions and future plans for the site of the light rail station.

ENDNOTES:

1. The California Endowment created a web tool that allows Californians to enter their zip code and see the average life expectancy in their area. That tool can be accessed here: www.calendow.org/news/your-zip-code-lifetime
2. A 2012 article by Deborah Schoch for USC's Center for Health Reporting covers this campaign in more depth. <http://centerforhealthreporting.org/blog/tale-two-cities-and-two-life-expectancies>
3. Burd-Sharps, Sarah and Kristen Lewis. A Portrait of California: California Human Development Report 2011. American Human Development Council, 2011.
4. This concept of zip codes as determinants of health is by no means isolated to California. A 2015 New York Times article by Sabine Tavenise and Albert Sun, "Same City, But Very Different Life Spans," discusses the phenomenon and provides infographics for several cities.
5. From the California Climate Investments 2016 Annual Report.
6. CalEPA. California Communities Environmental Health Screening Tool, Version 2.0 (CALENVIROSCREEN 2.0), 2014.
7. Ibid.

The Ensuing Flood: Increasing Equity and Reducing Impact through Networked Decentralized Infrastructure

COURTNEY CROSSON, Architect, Assistant Professor
University of Arizona



Figure 1. Students discuss the unique flooding features of their sites with Jacob Prietto, Principal Hydrologist for Pima County Regional Flood Control District, the sponsor of the studio (credit: author)

INTRODUCTION: DESIGNING DECENTRALIZED, BOTTOM-UP, AND MULTI-BENEFIT INFRASTRUCTURE

The fourth National Climate Assessment warns of increases in the intensity and duration of precipitation events in the coming decades, leading to a greater severity and frequency of flash floods in portions of the United States. This concern is exacerbated by a national trend in deteriorating stormwater infrastructure and increased urbanization with densification of

impervious land cover. In coastal cities with accelerated development, surge events overwhelm infrastructure that was not expanded with changes in land cover. In older cities with combined sewer systems, floods result in outflows of raw sewage into ecological zones. In sprawling cities with extreme seasonal storms, a historic failure to invest in infrastructure during periods of growth causes significant, annual property damage. The damages will worsen with the projected increases in

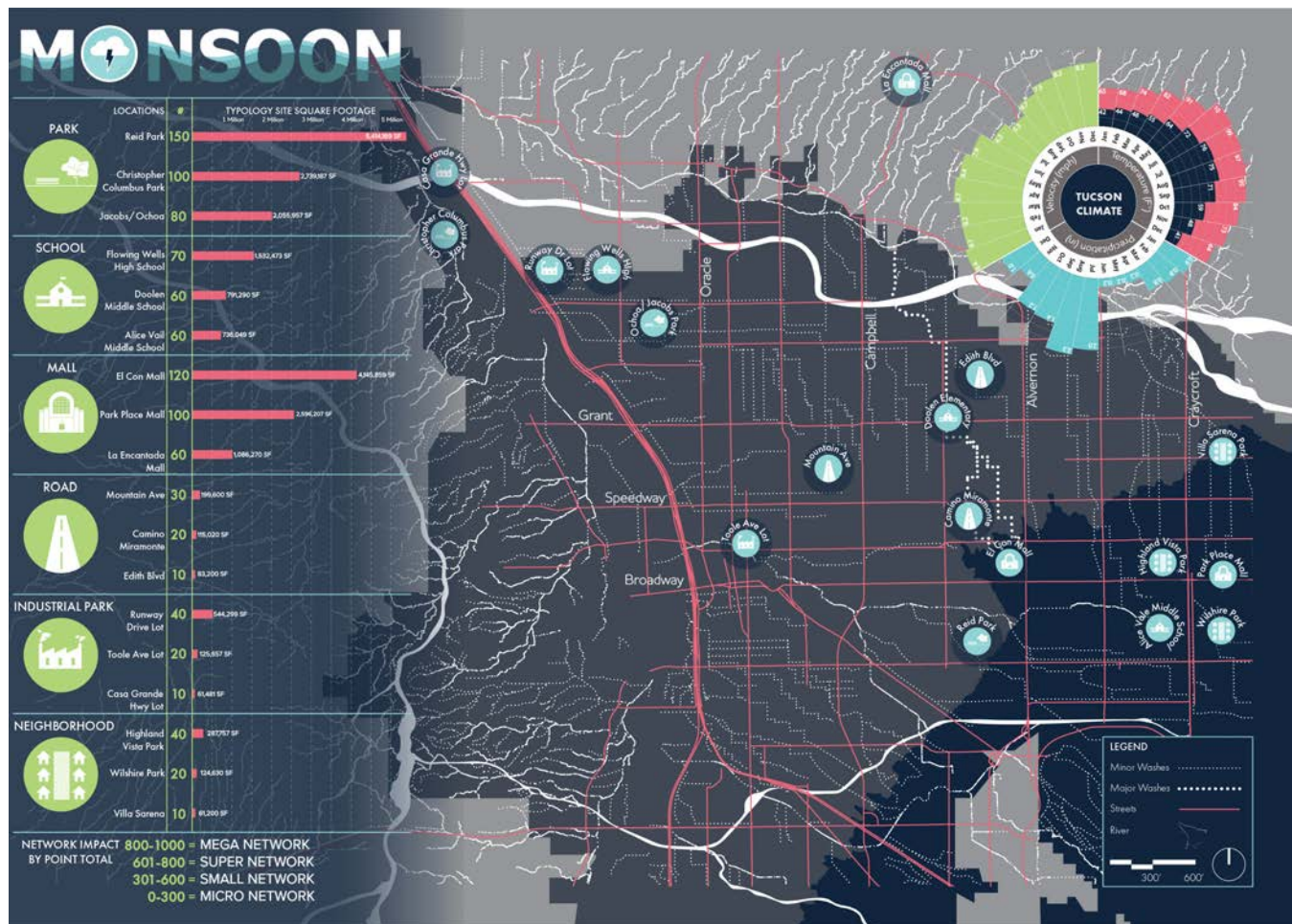


Figure 2. A map of the potential decentralized network of flood mitigation sites throughout Tucson studied by the Pima Water Urbanism Project in Fall 2018 (credit: Amal Anooji, Orianna Cascarano, Jeremy Goodman, Nan Liang, Rachel Low, Chung Lin, Peraya Mongkolwong, Madison Neperud, Irina Olson, Soha Sabet, Jason Sciarrotta, and Thomas Yazzie)

extreme precipitation if innovations are not made. However, municipalities also face resource constraints. Under limited budgets governments increasingly are asked to monitor, prevent, and respond to the impacts of climate change. Is there another answer to urban flooding than massive, top-down, and single-purpose public works? Can municipalities instead address urban challenges with a new paradigm: decentralized, bottom-up, and multi-benefit infrastructure?

This paper investigates this paradigm-shift in the growing Sonoran Desert city of Tucson, Arizona through the Pima Water Urbanism Project. The city faces two pressing and seemingly opposed challenges: (1) a projected shortage in local potable water supplies in the coming decades and (2) a seasonal excess of damaging floods from heavy monsoon rains. Tucson currently imports over a third of its water from the Colorado River 336 miles away, yet concurrently has the highest yearly extreme storm count across Western US Metropolitan Statistical Areas (MSAs). These urban water extremes affect citizens directly and disproportionately.

Tucson averages \$9.5 million in property losses each year from flooding in the city center where stormwater infrastructure was historically not installed, predominately in lower income areas.

Architects are called to play a greater leadership role in community design solutions for our future urban water challenges. Urban flooding and water resource management have traditionally been the domain of large public works projects led by civil engineers and public administrators. In contrast, new bottom-up infrastructural solutions are emerging in Tucson from neighborhood associations wishing to claim agency over annual, direct impacts. In a shift to support this civic action, the City is funding decentralized urban solutions at site, rather than dependence on large, centralized interventions. The City of Tucson recently approved competitive grants for Green Infrastructure (GI) implementation in neighborhoods throughout the City. This new network of small public works relies on citizen-architects as key agents of change.

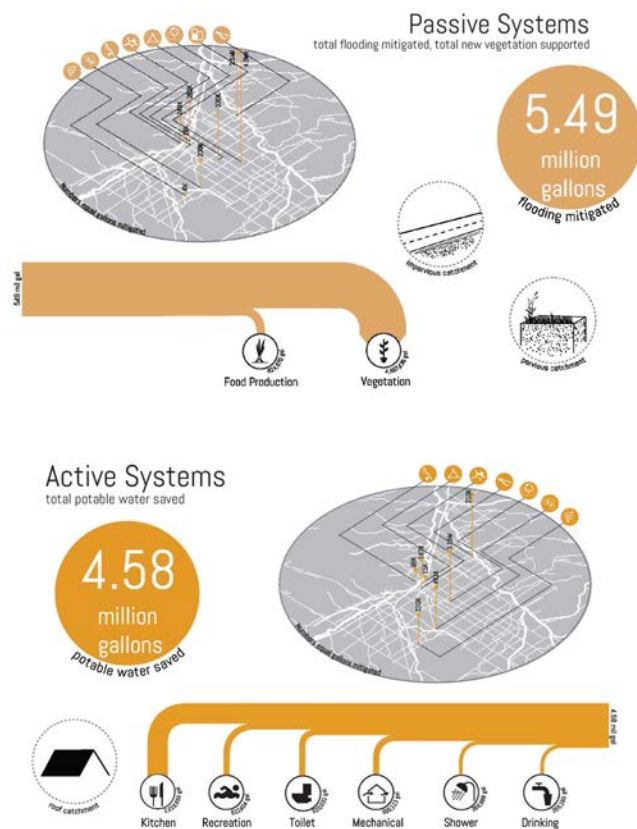


Figure 3. The aggregate impact of the passive and active systems across eight sites designed by the Pima Water Urbanism Project in Fall 2017 (credit: Dana Ashoori, Christopher Bernhardt, Raul Castro Tohalino, Max Goldberg, Luis Griego, Daniel Jerrim, Delia Martinez, Matthew McCulloch, Robert Moreno, Morgan Nestegard, Truc Nguyen, Luz Rosario Pina, Brady Stanton, Kate Stuteville, Jazmine Tamayo, Jamil Williams)

This paper first reviews the challenges of retrofitting urban infrastructure for a changing climate. Then, through the Tucson case study, this paper seeks to debunk the myth that infrastructural projects are massive, top-down, and expensive. The paper provides three counter visions to retrofitting cities in the coming decades: decentralized networks, bottom-up processes, and multi-benefit design. Three example solutions from the Pima Water Urbanism Project are used to explore and deepen these visions: (1) Runway Drive, (2) Camino Miramonte, and (3) El Con Mall. The paper concludes that the case study is a replicable model for citizen-architects to join with governments and communities to together shift the urban infrastructure paradigm and provide solutions to some of the most pressing urban challenges.

RETROFITTING CITIES FOR A CHANGING CLIMATE: THE CHALLENGE OF ADAPTABLE INFRASTRUCTURE IN THE COMING DECADES

The critical challenge for contemporary urbanism is how cities develop the knowledge and capability to systematically re-engineer their built environment and

urban infrastructure in response to climate change and resource constraints.⁵

What does our urban water infrastructure future hold? Climate change and deteriorating, aged infrastructure portend an urban water crisis in the coming decades. Over the next 25 years, the American Water Works Association (AWWA) and the American Society of Civil Engineers (ASCE), estimate a required investment of \$1 trillion for drinking water and \$271 billion for wastewater infrastructure to meet current and future water demands. This new, required investment could be put toward system innovations, however obstacles exist. Cities face a pattern of lock-in – seemingly “constrained by existing infrastructural investments, sunk cost, institutional rigidities, and vested interests.” Additionally, inhibitory regulation, incentivized against risk, blocks the investment in innovative water solutions.

Tucson has a unique stormwater management history. The majority of the urban center of Tucson does not currently have storm water piping. Streets were designed to carry the heavy rain flows that occur during the winter and monsoon seasons to washes throughout the city. Over time, the city grew and greatly shifted its majority pervious land cover to impervious. This currently results in annual flooding in parts of the city leading to chronic property damage and loss in transportation accessibility. To address these issues, the County and City are working to collaboratively develop and optimize a network of sites that will address current flooding issues and retrofit Tucson with a new, softer, greener infrastructure.

METHOD: WORKING BETWEEN GOVERNMENT EXPERTS AND PUBLIC ADOPTERS

It is the designer’s role to communicate to a broader public and to decision-makers the possibilities of implementing, or integrating new solutions... It is also the designer’s role to engage the public in imagining new societies, new communities, and new ways of defining water, both culturally and physically.^{10, 11}

The Pima Water Urbanism Project provides community design solutions to urban flooding through collaboration with three community populations: (1) City and County staffs (including hydrologists, planners, and transportation engineers), (2) neighborhood residents and workers adjacent to sites of chronic flooding, and (3) emerging architects. Led through University of Arizona upper-level design studios from 2017-19, the project engages ten to sixteen Bachelors of Architecture students each year.

Pima County Regional Flood Control District (RFCD) has financially sponsored the Pima Water Urbanism Project over the last two years. Hydrologist from RFCD meet with students every other week during the course of the semester to provide supportive insight on the hydrology and flood mitigation strategies for their

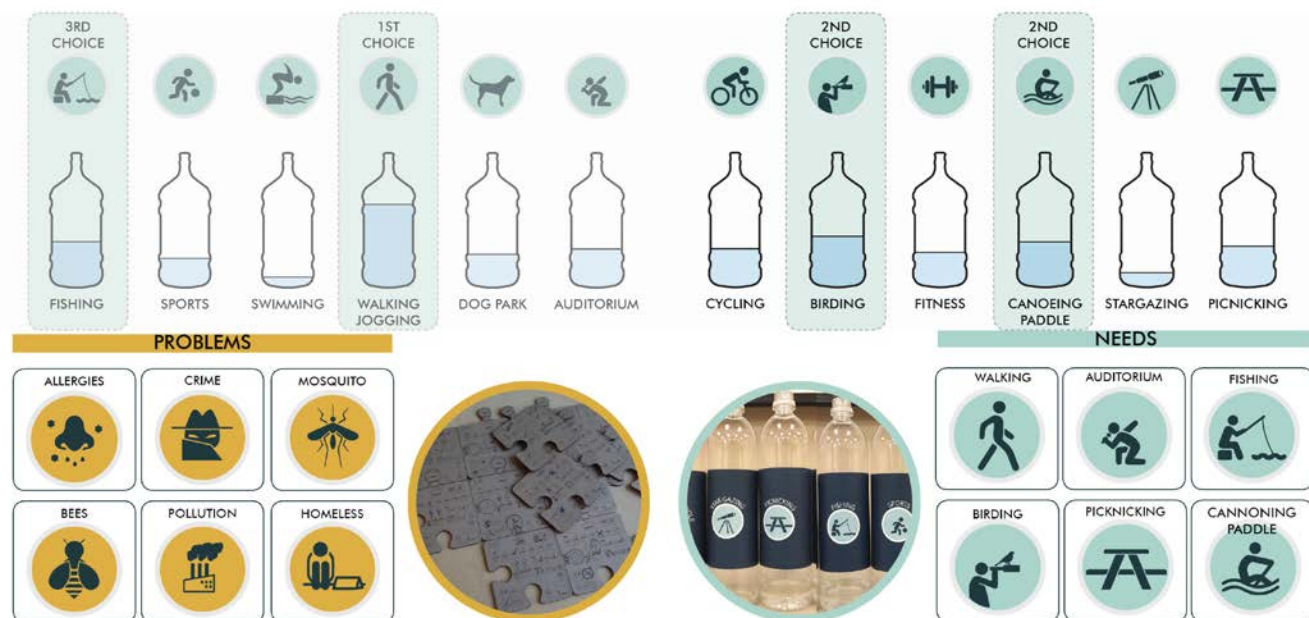


Figure 4. Community 'puzzle piece' surveys and voting for desired recreation options for the Runway Drive project (credit: Orianna Cascarano and Chung Lin)

sites. Site specific City of Tucson experts (e.g. transportation engineers, landscape architects, parks and recreation managers) also visit the class and provide critical feedback. Additionally, RFCD completes a set of three calculations during the course of the semester in tandem with design iteration. Students receive the total storage capacity for their site design and the percent of peak flow mitigated by their design. Through this analytical feedback from RFCD and City input, students continuously hone their designs to optimize flood mitigation and multiple desired community benefits. Figure 1 shows an active design session with a principal hydrologist from RFCD and student designers of the Runway Drive project.

To date, the project has produced fourteen discrete community designs to alleviate specific sites of flooding throughout the city while expanding Tucson's overall infrastructure resilience. These solutions all employed community engagement in addition to the RFCD input. Solutions were collaboratively developed through local Ward meetings of affected communities and presentations to governmental decision-makers including Pima County's Deputy Administrator, Tucson Parks and Recreation's Director, Tucson Water's Conservation Manager, and Tucson Department of Transportation's Director. Each of these projects engaged with the direct communities that used the sites to identify community needs – whether adjacent autobody shop workers who desired a place to eat their lunch or the neighborhood association who advocated for a dog park. The work has been broadly disseminated through open-access electronic and printed material outlets, presentations and engagement activities at local Ward meetings, and the creation of a card game called 'Monsoon.'

THE MYTH OF MASSIVE INFRASTRUCTURE: GROWING DECENTRALIZED NETWORKS

The first infrastructure myth this paper seeks to debunk through the Tucson case is that interventions must be massive to have an impact. Urban water systems have traditionally been built as large, extensive public works. Grand aqueducts have been constructed across states, mighty dams have been built surmounting height and hydrostatic force, and stormwater treatment plants have been developed on the edges of cities. These massive infrastructure projects have ensured centralized control of water quality and quantity. However, under mounting deferred maintenance, failing water infrastructure around the county portends a coming water crisis. Rather than replace these systems, an incremental approach may be the best answer. David Sedlak, civil engineer and author of Water 4.0, asserts that "to wean cities from centralized systems and all their associated problems, we might simply have to find a way to make decentralized water supply and treatment practical at higher population densities." Decentralized systems can add resilience to existing infrastructure through providing multiple pathways to collect and deliver resources within a municipality. By hybridizing the existing city water system with decentralized solutions, these new interventions can strengthen infrastructure by providing flexibility to respond to uncertain shocks.

The Pima Water Urbanism Project approaches Tucson's flooding challenges as urban acupuncture. Through a network of decentralized interventions that directly address the areas of chronic flooding, localized and aggregate impacts are achieved. Figure 2 shows the decentralized

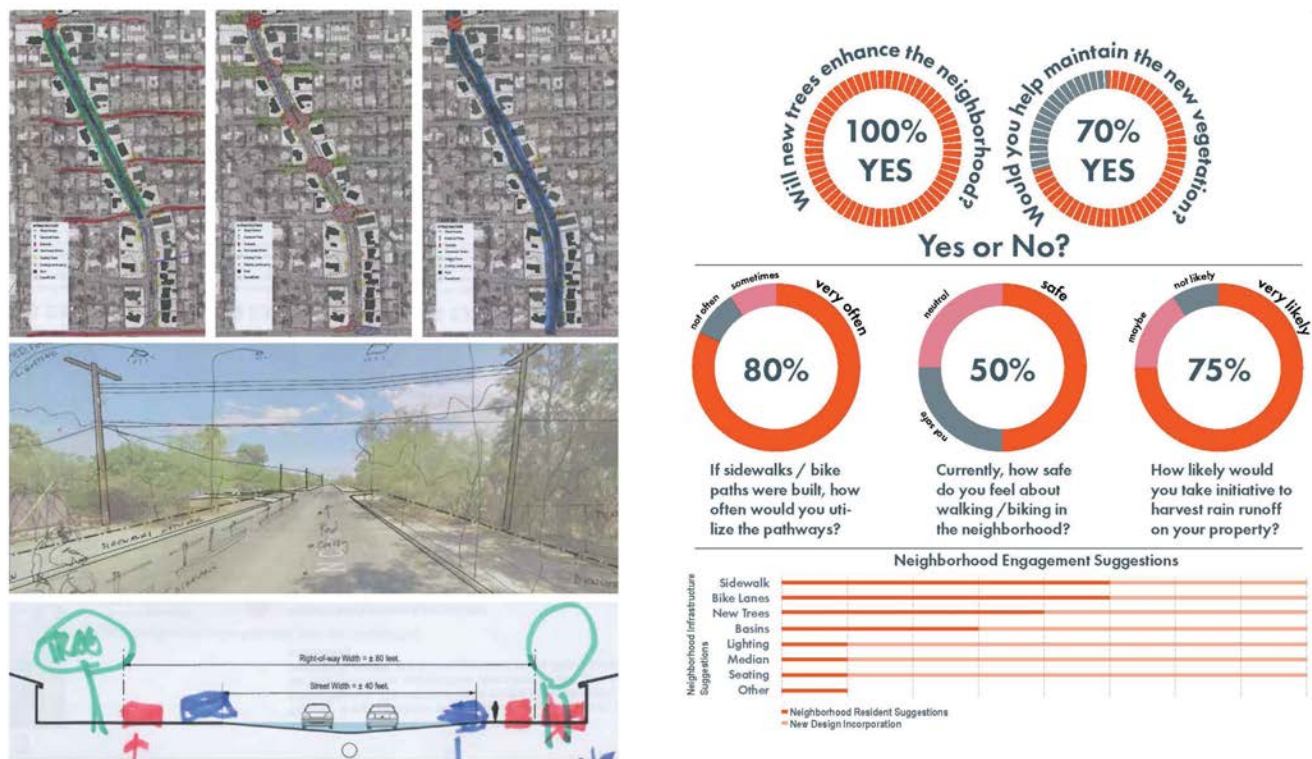


Figure 5. Results from the Camino Miramonte Neighborhood Association survey (credit: Amal Anoohi and Thomas Yazzie)

network of projects throughout Tucson by students during the Fall 2018. Interventions are broken into a set of typologies: park, school, mall, road, industrial park, and neighborhood. Each typology was codified through the identification of similar constituencies and approaches to flood mitigation. For example, the Runway Drive project belongs to the industrial park typology. This typology has larger sized sites, workers as constituents (rather the residents), and employs strategies of deep basins to handle the usually large flooding volumes in the industrially zoned areas. The Camino Miramonte project is in the road typology. This typology is comprised of the inverted crown streets in Tucson that channel stormwater to washes, but have exceeded their designed capacity due to surrounding increases in impervious surfaces. Strategies in this typology rely on linear elements in the right-of-way and smaller interventions like roundabouts that can address inverted crown flooding. Pedestrian safety and expanded and protected bicycle lanes are common benefits. The El Con Mall project belongs to the mall typology. Malls have large impervious parking lot surfaces that can be retrofitted with microbasins throughout the lot and multi-use basins in demolished areas of over-built parking. These solutions usually provide benefits to communities adjacent to the mall parking lot sites. Through creating typological solutions, similar applications can be added to the decentralized network throughout Tucson in an incremental approach.

Additionally, a kit-of-parts was constituted for each design. These kit-of-parts help future designers use the projects as examples and identify the requisite pieces to address a typology. Students were required to compute budgets for their designs. The itemized kit-of-parts helped the students complete the budget exercise and the County and City identify common modules to be manufactured and/or regulated and/or provided with new design parameters for the future replicable network.

Overall, Figure 3 provides an example of how passive and active water harvesting in a decentralized network accomplish the city-wide goals in aggregate. In the figure, eight sites designed by the Pima Water Urbanism Project from Fall of 2017 form a decentralized network able to mitigate 5.49 million gallons of flooding per year, offset 4.58 million gallons of potable water use per year, and provide local co-benefits such as reduced heat island and expanded recreation opportunities.

THE MYTH OF TOP-DOWN INFRASTRUCTURE: SUPPORTING BOTTOM-UP PROCESSES

The second myth is that infrastructure projects must be top-down due to size and complexity. Globally, water projects are infamous for a top-down approach. The building of dams, reservoirs, and aqueducts have a history of displacing communities around the world. In contrast, the decentralized network approach increasingly calls on community members

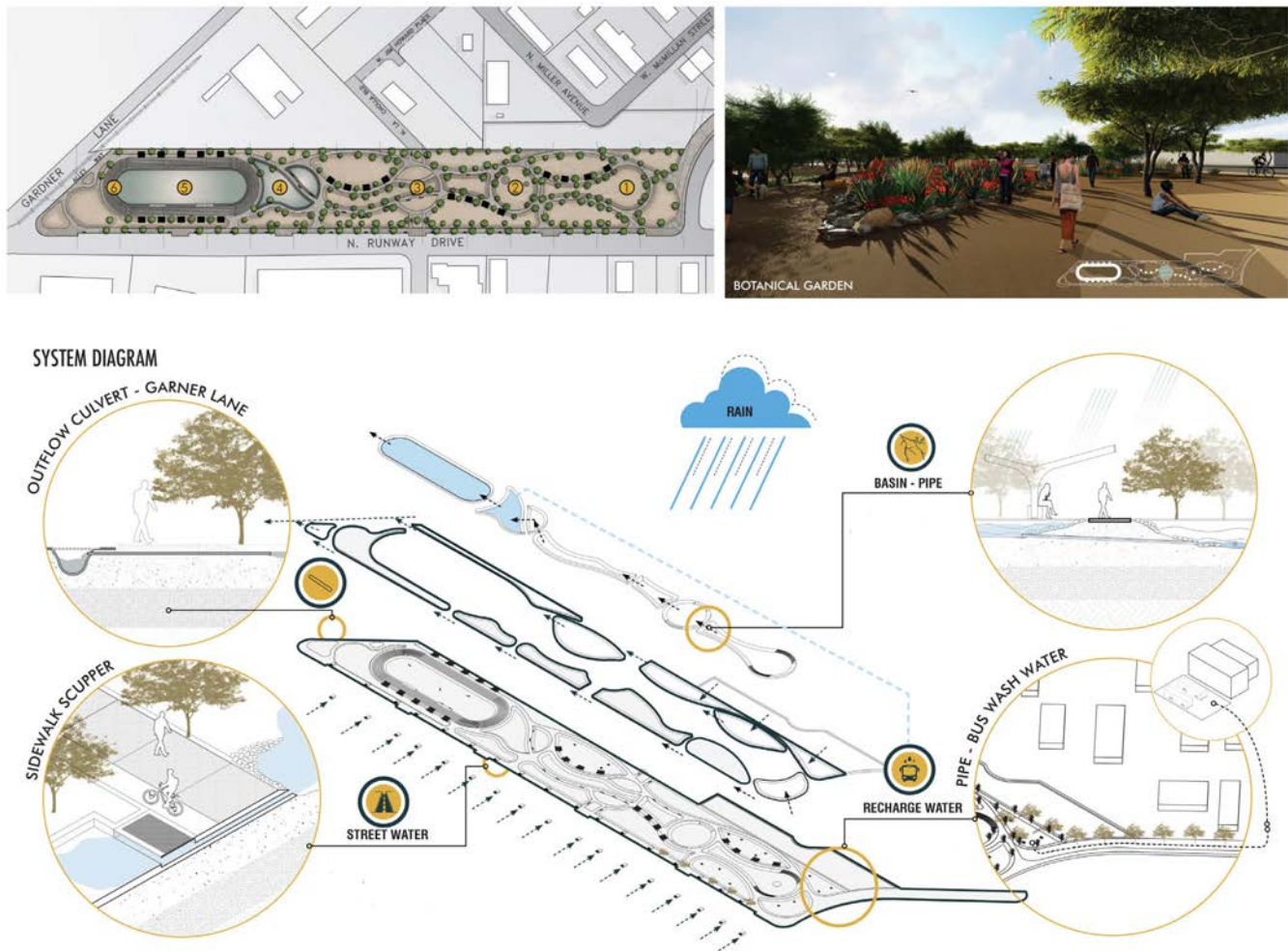


Figure 6. The Runway Drive project mitigated flooding and provided multi-benefits to the community like expanded recreation opportunities and places to eat lunch for adjacent workers (credit: Orianna Cascarano and Chung Lin)

to provide long-term monitoring of the sites. The municipality does not usually have the extra staff and resources to provide more oversight to scattered projects throughout a city. Thus, initial community buy-in is critical to the long-term success of this new infrastructure paradigm.

Before the start of the semester, RFCD provides a set of sites with hydrological maps and graphs to the professor. The projects are selected for the urgency of the flooding issue, the site's potential to have impact on the issue, and the County or City's ownership or ability to negotiate ownership of the site. Beyond mitigating flooding, the value of the student designers is to engage the unique stakeholders of each site and work with them to maximize the potential benefits of the site. The first step in each project's community engagement is to contact the Ward and representative city councilmember for the site. It is important to start with the Wards as the base gatekeepers between the neighborhoods and the city council. Tucson has six wards, each with a city councilmember. Students meet with the Ward staff and councilmember with representatives from

RFCD and professor to discuss initial design ideas. Students receive feedback, information on any locally relevant history of the sites, and a list of potential stakeholders.

Students are then asked to identify the community groups to engage, their questions for those groups, and design a process that successfully engages those groups in providing the needed feedback. In Figure 4, one of the engagement methods and results are shown for the Runway Drive project. Runway Drive is the runway of a former small airport surrounded by industrial businesses including air conditioning mechanics, the headquarters for the SunTran regional bus system, auto-body painters, and waste controllers. These students wanted to understand the specific issues and perceived assets of the site by the surrounding business community. They created a survey on laser cut puzzle pieces for each worker to complete. Additionally, the students wanted to clarify the preferred future uses of the multi-use basins. They developed a voting scheme using water bottles where each community member voted with a tablespoon of water for their favorite

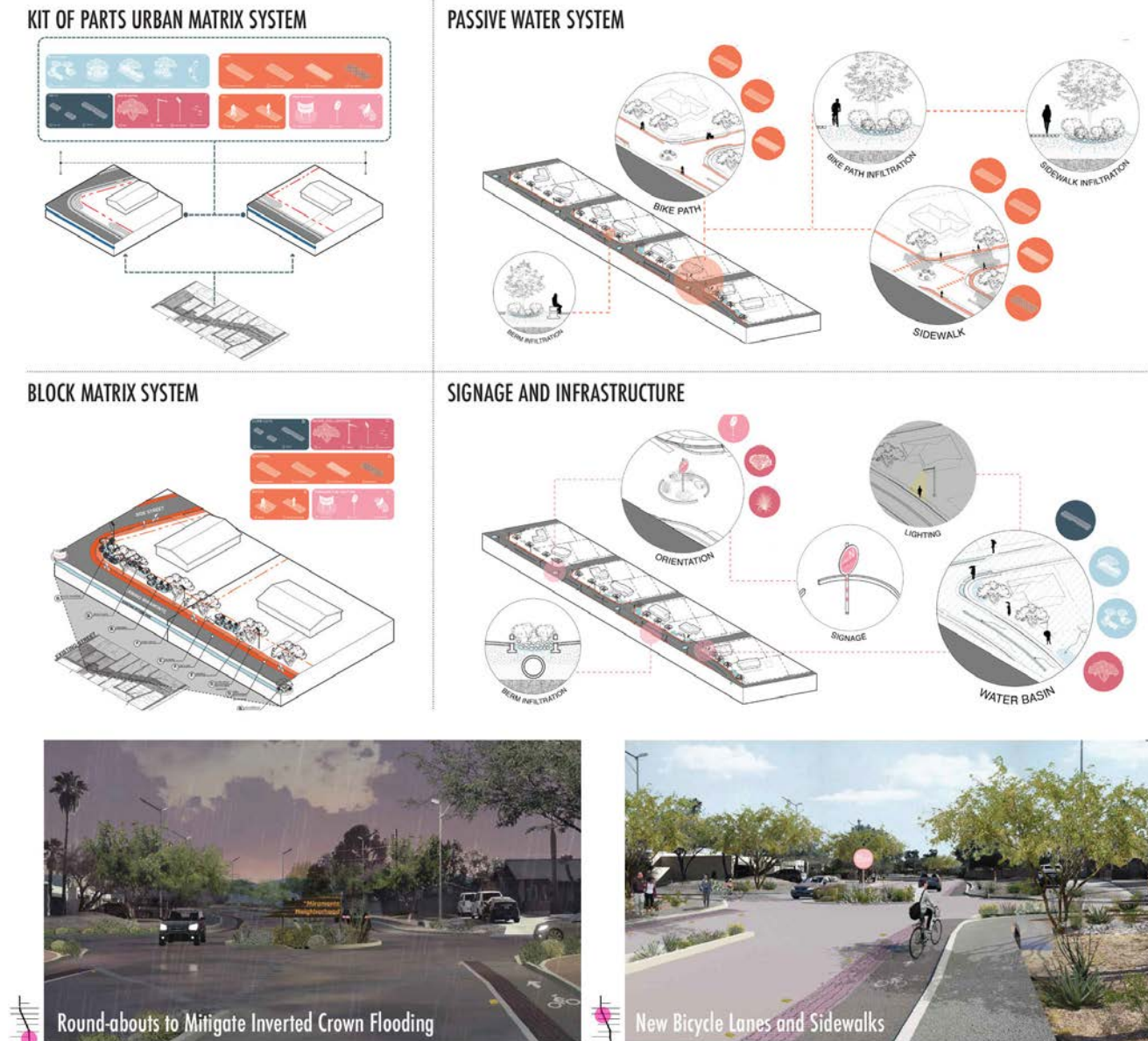


Figure 7. The Camino Miramonte project mitigated flooding and provided multi-benefits to the community like expanded bicycle paths and improved pedestrian safety (credit: Amal Anoohi and Thomas Yazzie)

activity. In addition to going door-to-door to the surrounding businesses, the students also participated in a community potluck for Thanksgiving at the Flowing Wells Neighborhood Association. Students gave a presentation of the site with initial design ideas and asked for feedback and water voting. Using all this information, the students designed the site to incorporate the preferred recreation options and mitigated the identified concerns.

The Camino Miramonte project engaged with the Camino Miramonte Neighborhood Association. The students asked the neighbors to fill out a visual survey (drawing desired changes) and text survey. Figure 5 shows the results of these

surveys. Students confirmed the local enthusiasm for the conversion of the street and a general willingness to maintain the improvements. Complaints on the long-standing issue and aborted promises from the City were also heard by the students. These engagement exercises exposed young designers to the messiness of working with communities, particularly on projects that have a deep prior history to their work.

In the last example of El Con Mall, students designed a game for their annual neighborhood associating meeting and general canvassing at the El Con site. A large gator board was laser cut with holes where stakeholders could place color coded pieces representing different potential benefits of the project.



Figure 8: The El Con Mall project mitigated flooding and provided multi-benefits to the community like playgrounds, dog parks, running paths and heat island mitigation (credit: Peraya Mongkolwong and Irina Olson)

The community was also asked about the current 8-foot wall separating the neighborhood from the Wal-Mart parking lot. To the students' disappointment, a great majority of the community wanted to keep the wall, even if a green park buffer were to be constructed. This exchange taught students about the friction between community desires and what they perceive as the best design solution.

THE MYTH OF EXPENSIVE INFRASTRUCTURE: EXPANDING MULTI-FUNCTION AND MULTI-BENEFIT SOLUTIONS

The final myth is that all infrastructure projects are expensive. Urban infrastructure has traditionally been built as single-purpose systems, each with a single value. Roads systems move traffic efficiently, energy lines transmit power, and stormwater culverts transport water quickly to the periphery of the city. In a new era of climate change and growing technological resources, urban infrastructures are increasing seen as amateurs for multiple functions. Roads now provide

shaded paths for a healthier and more active population as well as opportunities for passive stormwater harvesting. These multiple purposes shift an assessment of infrastructure from a simple pay-back on a fixed investment to a complex life-cycle cost assessment of the social, ecological, and financial valuation of public works. In *Out of Water: Design Solutions for Arid Regions*, Liat Margolis and Aziza Chaouni highlight that this new approach is important to designers of cities: "The shift toward multi-objective optimization at the regional and metropolitan scales offers designers and planners the opportunity to rethink emergent infrastructural landscapes as a socio-cultural, economic, and ecological extension of the city." This conception also requires the breaking of departmental silos within municipalities for cross-sector collaboration to realize multi-benefit infrastructure projects.

The Pima Water Urbanism Project uses each intervention to mitigate flooding, but also to provide a host of layered community benefits. The unique water extremes of Tucson provide

a particularly good opportunity to design basins to mitigate peak events that occur over a few dozen days per year while layering community uses for the other days of the year in the sunny climate. In this way, infrastructure investments are no longer seen as huge expenses, but rather long-term community investments to provide multiple solutions for public betterment. As the networked decentralized system is able to mitigate specific sites of flooding, it is also able to provide tailored community multi-benefits.

The Runway Drive project (Figure 6) converts a former airport landing strip to a set of large basins to provide the local community with increased green space and recreation opportunities. This area of the city has a deficit of urban green space. Also, the project uses a large weekly supply of filtered bus washing water from the adjacent SunTran regional bus center to maintain water levels in a community-desired fishing pond. Other basins address community needs like running paths, playgrounds, and birding. The area is a new lunch spot for all the industrial area workers to get a break from their work and a new haven for urban wildlife.

The Camino Miramonte project (Figure 7) takes a wide inverted crown street and converts it to a set of water retention devices like corner basins, side basins, and roundabout basins. Shading and street furniture and larger gathering spaces for the neighborhood are added. A bicycle lane flanks each side of the street. Overall, pedestrian and bicycle safety are expanded.

El Con Mall is termed the current headwaters of chronic downstream neighborhood flooding. The El Con Mall project (Figure 8) transforms an underutilized expanse of parking lots to basins and community parks. A dog park, playground, and amphitheater are added amenities. Linear microbasins are integrated throughout the retained parking lots, providing shade and decreasing heat island impact. A running track that also serves as a green-belt around the site to absorb water is implemented. Finally, the adjoining neighborhood to the north is given a continuous walking path to connect their homes to the large municipal park on the southern side of the mall. Overall, the residents receive a larger and softer buffer with the imposing commercial center, recreation opportunities, and modest reductions in heat island effects.

CONCLUSION: A REPLICABLE MODEL CREATING NEW PROJECT OPPORTUNITIES FOR PRACTICE

Rather than standing in for architectural practice, the Pima Water Urbanism Project aims to open new doors for future partnerships between professional architects and the City and County. In one recent example, the owner of El Con Mall agreed to sell several parking lot areas to the City based on the produced vision from the project. The City will now go forward with a new Request for Proposal open to professional practice. In another recent success, Tucson Department of Transportation (TDOT) approved the technical drawings to fund and build the components of the Camino

Miramonte project. The councilmember and neighborhood association has used the design and renderings to successfully advocate to the City to build the infrastructure project.

The Pima Water Urbanism Project is a replicable model for architectural academia to join with local communities and government staffs to provide practical solutions to urban water challenges through a network approach. The community design project proves that the model can (1) coordinate and leverage the necessary local resources and expertise to impact pressing urban design issues through decentralized systems thinking, (2) teach future architects to be key agents in bottom-up solutions to urban-scale challenges through onsite design solutions, and (3) engage with stakeholders specific to each flooding site to support needed co-benefits for that community. Because of the successful phase one work, this partnership model has secured funding from Pima County Regional Flood Control District to continue to develop solutions with affected communities throughout Tucson.

To view the full set of community design projects developed as a part of this program, please use these links:

- https://issuu.com/universityofarizonaschoolofarchitect/docs/runway_drive_-_studio_crosson
- https://issuu.com/universityofarizonaschoolofarchitect/docs/camino_miramonte_-_studio_crosson
- https://issuu.com/universityofarizonaschoolofarchitect/docs/el_con_mall_-_studio_crosson

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CHAPTER TWO

BEYOND THE BUILDING: SOCIAL CHANGE THROUGH COMMUNITY ENGAGEMENT

Across the country, schools of architecture have become more involved in their communities than ever before. Design-build projects in diverse neighborhoods give students the opportunity to understand the role of architects as problem solvers, primed to connect with communities on a deep level. As the three leaders in educational design-build projects outline in the following essays, successful student-led community projects are driven by empathy and are informed by a resultant curiosity in the development of well-crafted public spaces to address a specific need.

In her piece, “Collaborative Design: Supporting Lasting Social Change,” Emilie Taylor Welty explains how the Parasite Skate Park in New Orleans was developed through a methodical process that responded to the cultural aspirations of a community. The public park is a successful example of how careful communication between community and place can result in a bold solution that is an extension of an open dialogue.

In “Just a Little Nudge,” Hans Herrmann describes the development of the SuperUse Pavilion at the Oktibbeha County Heritage Museum in Starkville, Mississippi. The pavilion, anchored by a repurposed gas station canopy, boosted the community presence of the Museum by creating an engaging gathering place for outdoor exhibits and activities. As is the case with any thoughtful piece of public architecture, it compels people to gather and connect.

In “Avis + Elsmere,” Tadd Heidgerken illustrates the power of consistent collaboration over time—working closely with a community in the southwest side of Detroit to develop a master plan with implementable projects, executed year by year. His story was one of perseverance, trust building, and patience. The program culminated in the renovation of an under-utilized commercial building, transforming it into a community gathering space and an expression of the neighborhood residents and their pride.

The stories recounted by Emilie, Hans, and Tadd, tap into the value of community engagement and its potential to connect students and neighborhoods on a deeply human level. All three essays attest to the necessity of patience and listening—to cut through the chaos and noise of an urban situation, and to expose a specific need to be addressed. Pick one thing—and after patient research and outreach—do it right. The projects that follow are diverse in program and expression, but they all exhibit the potential of empathetic, well-crafted and authentic instigations that take risks and empower their communities.

DAN MAGINN, FAIA, LEED AP, Director
DAKE WELLS ARCHITECTURE

Avis + Elsmere: A Collaborative Community Design Precedent

CEARA O'LEARY, Senior Designer and Project Director

University of Detroit Mercy &
Detroit Collaborative Design Center

TADD HEIDGERKEN, Assistant Professor, Architect

University of Detroit Mercy &
Et al. Collaborative



Figure 1. Community activating the front porch of the Avis + Elsmere building following the completion of the construction phase. Image credit: Erik Howard

INTRODUCTION

Vibrant neighborhood spaces pave the way for more resilient and inclusive communities. This paper showcases a neighborhood space resulting from a collaborative, community-led design process that honors local knowledge and responds to contextual challenges. Avis + Elsmere, a project in Detroit, offers a model for collaborative practice as the product of a robust relationship between the client-collaborator – grassroots organization Inside Southwest Detroit – a diverse stakeholder group of neighbors and artists, the Detroit Collaborative Design Center (DCDC) at the University of Detroit Mercy (UDM), and the architecture office Et al. Collaborative.

Inside Southwest Detroit is a collection of initiatives that promote youth and community development through cultural and

place-based initiatives. One of their flagship initiatives completed in 2011, “The Alley Project,” transformed a Southwest Detroit neighborhood alley and surrounding vacant lots into an inspirational graffiti art gallery, which connects neighbors and youth to each other as well as to community assets. Avis + Elsmere provides an anchor to The Alley Project through the renovation of an existing 2,400 square-foot building into a community center, Inside Southwest Detroit headquarters, and leasable tenant area. Avis + Elsmere is the first year-round home to Inside Southwest Detroit programs and reflects community vision in its planning, execution and everyday use.

An organization that aims to build meaningful relationships between neighborhood youth and elders using low-rider car club and street art cultures, Inside Southwest Detroit needed

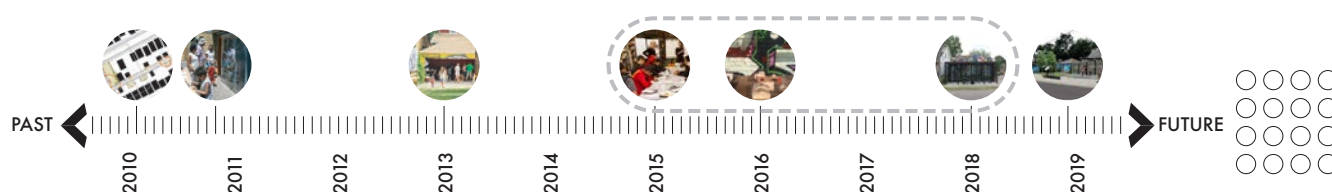


Figure 2. The timeline shows different connection points between Young Nation, the University of Detroit Mercy, Detroit Collaborative Design Center and Et al. Collaborative. The collaborative effort began with the DCDC's assistance in development a master plan for the neighborhood in 2010 with the latest being the completion of the new community building in 2018. A new Skate Plaza is schedule to begin construction Fall 2019 on an adjacent lot. Image credit: by authors

a space that would support and enhance their mission to bring the neighborhood together. The project began with a participatory process that engaged key stakeholders – graffiti artists, skateboarders, kids, grandparents, and other neighbors – in project planning and design decision making, resulting in a community space that responds to local culture, needs and opportunities. A series of community workshops, focus groups and neighborhood celebrations gave people the agency and opportunity to guide the design of the building. The spaces and materials resulted directly from the collaborative design process and speak to the neighborhood's identity and vibrancy.

Avis + Elsmere is part of a larger trajectory of initiatives led by Inside Southwest Detroit that have resulted from a collaboration with a range of partners, including design and architecture practices. This project offers lessons for how long-term collaboration over time leads to layered projects with neighborhood roots and a common design conversation. Because of the robust community workshop process and shared participatory values of the community partner and designers, it also illustrates how engagement processes can maximize design decision making that merges community knowledge and architectural expertise. In turn, it offers a model for practice beyond community design centers, including the incorporation of participatory process in the design practice of small firms working at the neighborhood scale.

COLLABORATORS + COLLABORATION

Avis + Elsmere bookends The Alley Project (TAP), an Inside Southwest Detroit initiative and community-based public art space on the southwest side of Detroit. Its mission is to provide a space to facilitate the themes of creative expression, positive youth-adult partnerships, structure, and community responsibility. TAP includes a garage converted to host a studio and gallery space, two lots serving as a common art space, and an alley spanning one city block with murals installed on garage doors. In these spaces youth and community members can create, show, and/or see street art in a way that is legal, safe, and supports learning and relationships. These spaces were envisioned, designed and implemented in partnership with the UDM School of Architecture and the DCDC as they guided TAP's master planning and participatory design and build during the formation of The Alley Project.

DCDC is a multi-disciplinary, nonprofit architecture and urban design firm based at the UDM School of Architecture dedicated to creating sustainable spaces and communities through quality design and the collaborative process. DCDC focuses on participatory design processes that value community expertise and prioritize local knowledge as a design driver. These processes are also central to Inside Southwest Detroit's operations, which has contributed to a strong partnership. This partnership developed into a long-term relationship and a series of collaborative projects between Inside Southwest Detroit and DCDC, folding in a range of instrumental partners, ranging from neighbors and artists to architects and fabricators. The 2010 master plan connects several neighborhood organizations via an extension of TAP into the larger network of area alleyways and continues to guide growth, including the design and implementation of Avis + Elsmere.

Another key collaborator in the development of Avis + Elsmere is Et al. Collaborative, a small architecture firm based in Detroit, with principals on faculty at both UDM and Lawrence Technological University. Et al. Collaborative was invited to participate on the project as a result of relationships built at the University of Detroit Mercy. From the outset, Inside Southwest Detroit, DCDC and Et al. identified the importance of all partners and community stakeholders being involved throughout the design process. Because DCDC focuses on community-engaged design, they led the participatory workshop process resulting in schematic design, while Et al. led subsequent design development and documentation. Both firms participated throughout, with Et al. attending and advising throughout schematic design in a shared authorship role with community members, Inside Southwest Detroit, and DCDC. DCDC staff followed the project through construction drawings and documentation. This team intention ensured consistent community presence and a more robust collaborative structure resulting in a stronger product and community space.

Notably, Avis + Elsmere is one project in a series of initiatives in the neighborhood that have developed from an evolving set of collaborators. While Inside Southwest Detroit and DCDC early collaborated on The Alley Project and various design build student projects, Et al. Collaborative and DCDC have

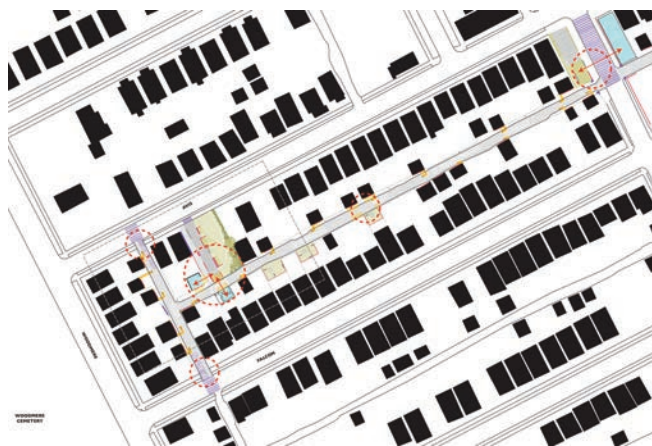


Figure 3. The master plan of the neighborhood surrounding TAP was created along with the local community and stakeholders. The framework planning process led to the implementation of a series of temporary activations and installations as well as the identifying a roadmap for new opportunities to grow; including identifying a need for a long term building that would support the community members needs. Image credit: DCDC

continued their partnership in collaboration with another neighborhood nonprofit, Grace In Action, in the design of a plaza that will mark a physical and programmatic extension of and complement to The Alley Project. This ongoing collaborative practice between university-based community design center and small for-profit architecture firm also continues to evolve. The relationship has resulted in a cross-pollination of engagement lessons, design development, staff time, and lessons that can be applied both in the office, the community and the classroom, as all faculty designers have teaching practices.

DESIGN PROCESS

The Alley Project is a sort of social micro-community made up of four distinct groups of stakeholders: Youth, Neighbors, Artists, and Organizations. This community comprised the stakeholder group that defined the program and design of Avis + Elsmere. The audience and participants for Avis + Elsmere are the surrounding community, particularly young neighbors and creative residents. This community is comprised of painters, graffiti artists, grandparents, skateboarders, musicians, photographers, advocates, and more. These are also the stakeholders who led design decision making, resulting in a community space that accommodates a range of activities that respond to local needs.

The participatory design process for Avis + Elsmere grew from local culture and generated the building design, from program and site to materials and details. Engagement activities included neighborhood-wide outreach, including door-to-door postcards that invited program ideas and visits to the site as well as a celebratory design review event. The focus of the participatory process, however, was a series of community stakeholder workshops through which the program



Figure 4. Engagement workshops and celebrations are not only tools for strengthening the bonds of the neighbors but they provide venues for voices to be heard and for sympathetic people to listen. The workshops have been used throughout each phase and are also used as a living feedback loop for the institution along with their consultants. Image credit: Erik Howard

and design for the building and adjacent plaza were developed. Together, DCDC and Inside Southwest Detroit identified a representative group of key stakeholders to lead design decision making, including skaters, painters, kids, elders, and neighbors. A series of three workshops with this group led to the final design.

An initial activity set design intentions through a visioning exercise asking “If this project does nothing else, it should...” Collective brainstorming of action verbs generated initial program ideas. These program verbs were prioritized with participants expressing their values with “TAP cash” -- with “revolutionizing” emerging as the top verb to design toward. In a subsequent workshop, community stakeholders identified key program relationships with site plans, tags, string, and transparent sheets, resulting in key adjacencies, space priorities, and more key programmatic insights which are detailed below. Material and space design considerations were also explored and defined in these workshops. In addition to the workshops, a series of additional focus groups were held with program experts to flesh out design needs, including street artists, skateboarders, and potential neighborhood business tenants.

The design challenge was to create a flexible, accessible, and authentic space which reflected the values of the community.

The north facade was removed to create a larger community room, which opens onto an enclosed 'front porch' area. The porch is enclosed by the geometric-patterned ornamental ironwork screens, which reference fences and screens prevalent in the neighborhood, contributing to both security and transparency. Local metalworkers fabricated the screens. The mural which wraps throughout the building was designed by a late street artist and completed in tribute by an Inside Southwest Detroit program alumnus. This artwork brings the activity of the adjacent The Alley Project to the front of the building and the main corners of the neighborhood. Large windows pop from the west facade for a visual connection to the street and future adjacent plaza. On the interior, wood finish panels in bold colors and subtle patterns reference the mural and metalwork, and large moveable doors allow flexibility of spaces as well as provide functional writable surfaces for meeting notes and impromptu artwork.

The program and screened front porch are key design elements that illustrate the direct role of community members in design development. During the workshop series mentioned above, two groups developed program layout diagrams which resulted in a key conversation about the site layout -- should the flexible community space be sited along the alley, as a continuation of The Alley Project, or at the street corner, for greater visibility. Ultimately the corner site was identified for access, visibility and street presence, the direct result of community conversations. Similarly, these conversations resulted in the service core with restrooms and kitchen areas that can be accessed from the outdoors, the tenant space or the community space independently. Relationships between the building and forthcoming plaza were also identified. In these conversations, lessons from past projects were folded into the design making process.

The most striking design element of the building -- the screened front porch -- was similarly workshoped and developed through community conversations. One of the key considerations discussed during the workshop series was a need to balance security concerns with a feeling of openness and accessibility. The screen seeks to create this balance through an artistic means, fabricated by a local metal shop and speaking to the ironwork that is prevalent in the neighborhood. The screen design was finessed through a series of additional community conversations. The front porch achieves an indoor-outdoor space that invites the community to participate and connects to the street, to neighbors, and to the future plaza.

MODEL FOR PRACTICE + LESSONS FOR FUTURE COLLABORATIONS

In terms of working with community partners, the value of time and the evolution of collaboration cannot be overstated. The engagement loop built into the design process early on propelled the design process, resulted in a project that reflects community vision, and led to additional projects

ET AL. + DCDC COLLABORATION

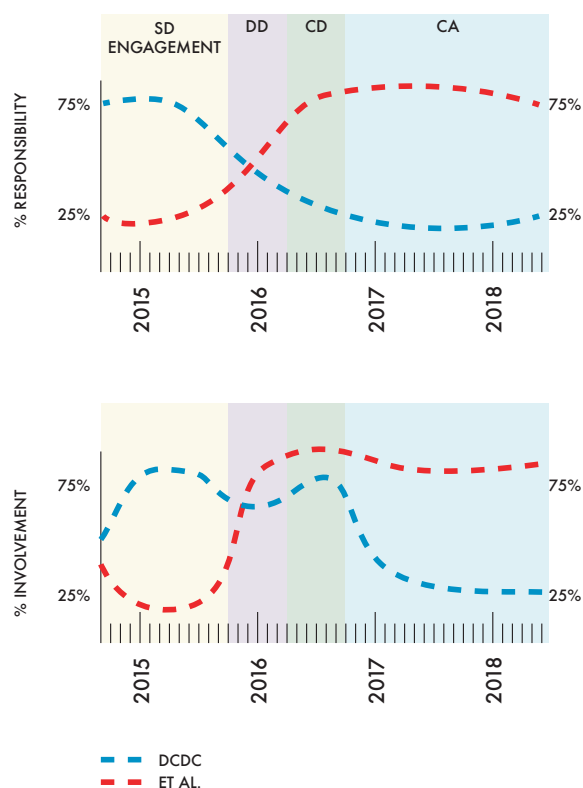


Figure 5. Diagrams communicating the differing roles and responsibilities both the DCDC and Et al. Collaborative had during the duration of the design and construction of 8869 Avis. Image credit: By Authors

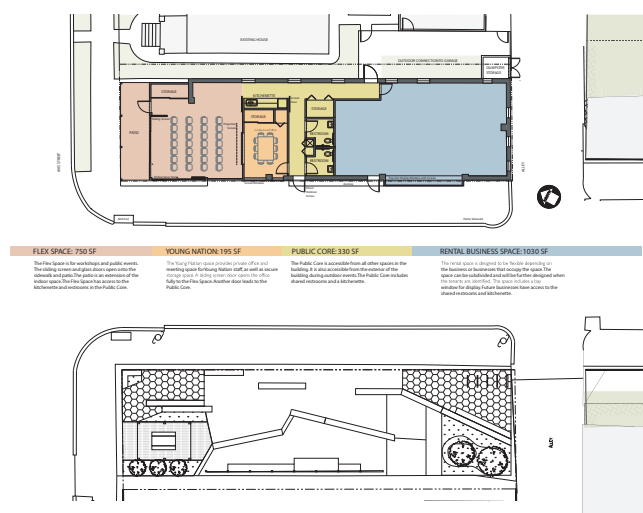


Figure 6. Avis + Elsmere floor plan along with the skate plaza site plan that is scheduled to begin construction in the Fall 2019. Image credit: By Authors



Figure 7. Avis + Elsmere and the flexible spaces provided a needed facility for both the local and visiting communities to gather together. Image credit: Erik Howard

and collaborations throughout the neighborhood. The design process itself led to deeper networks within the community that contributed to long-term trust-building between project partners and subsequent projects generated from the knowledge and relationships built within the community over time.

This project also offers lessons for both community-engaged design processes and small architecture practices participating in these processes. In traditional practice, architecture offices are tasked with balancing budget, timeline and project quality. This equation does not change when folding in community-engaged design processes, but the time necessary for a meaningful participatory process must be valued and acknowledged by all partners and built into the project framework and pricing. Often with community processes the oft-iterative design process becomes still more iterative and includes a diverse range of voices, which must be considered and valued from the outset.

Part of this project framework involves setting parameters from the outset, while maintaining an open mind to the project evolution that may result through sincere engagement. Project constraints should be established with the partner as well as

community stakeholders. Budget, timeline, scope and effort need to be articulated, along with their value from the outset, based on the needs and resources of the client-collaborator. On the community front, DCDC-led engagement processes often begin with a review of project “givens” or non-negotiables. In the case of Avis + Elsmere, these project givens included, but were not limited to: the project must follow all relevant codes; the project must include a 1000sf leasable tenant space in order to generate income and be self sufficient; the project must be welcoming to all and include all voices. Community stakeholders also had an opportunity to add project givens at the first workshop.

Time is a recurring theme within community design at large as well as the series of collaborative projects between Inside Southwest Detroit, DCDC, and Et al. Tactically, time constraints are important parameters for a project. Community-engaged projects require a realistic schedule based on the needs of the client-collaborator that depart from traditional architecture practice, and require a slower pace to allow for stakeholder engagement and meaningful incorporation of community input into the design process, including time for unforeseen iterations. Ample time for a two-way exchange of information and clear benchmarks for community participation must be



Figure 8. Visibility was a tool identified by the community members during the design workshops as a way to enhance both community connections and security. Image credit: Erik Howard

built into the design schedule and process. Like other projects, timelines for community-engaged projects also evolve based on budget and unforeseen opportunities and constraints. In the case of Avis + Elsmere, the forthcoming plaza across the street from the building was initially anticipated as part of the first construction phase but due to a focus on meeting key goals for the building design, the plaza was ultimately shifted to a later funding and implementation phase. This flexibility and change over time speaks to the creative problem solving and agility with which collaborative teams must navigate projects and leverage opportunities. It also speaks to the need to support neighborhood nonprofits and adapt the design process as they seek funding for built projects.

Finally, Avis + Elsmere is one in a series of projects that mark an ongoing collaboration between DCDC and a UDM faculty practice, offering lessons for future projects working in tandem. One key family of lessons pertains to the need for a constant incorporation of community voices into the design process. As described above, DCDC and Et al. were involved throughout the design process, with varying levels of engagement, in order to ensure that the full design team, including community stakeholders, was present and listening throughout the design process. This frequency of communication is not easily achieved, given time and budget constraints but the consistency of staffing allows a more steady feedback loop. In the case of Avis + Elsmere, DCDC staff worked with Inside Southwest Detroit to act as conduits for continued community feedback throughout design development post-community workshops. This enabled check ins during construction documentation to ensure ongoing alignment with community project goals, which in one case led to an additional focus group as the screen design was under development. This feedback process needs to be baked in to expectations and project workflow, as does a clear understanding of roles for all partners, so time can be fully anticipated and allocated.

In this collaborative model of practice, a defined balance between staff roles and relationships that benefits both the university-based design center and faculty practice is key. In particular, the balance of fees and staff time with two firms working in parallel to ensure continuity throughout the design process and meet the project budget with a nonprofit partner is challenging. This team did not always strike all the right balance throughout the Avis + Elsmere design and development process, but the benefit of a long-term collaborative partnership between university-based community design center, faculty-led architecture office and neighborhood nonprofit organization is the opportunity to improve upon our processes and strengthen our relationships moving forward, building upon lessons learned.

This project showcases a robust collaborative process and participatory design effort, the results of which were shaped by neighbors and users – from skaters to painters – and offers a model for future design development with community that builds from past projects as well. From the program and neighborhood connections to the façade and division of spaces, the project was driven by resident voices and brought to life with designer-collaborators. Here, process sets an example for creating inclusive and responsive places that serve community and create safe spaces for revolutionizing.

Just a Little Nudge: How Ideas, Elbow Grease, and an Old Gas Station Canopy Turned an Eyesore into an Amenity

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This paper looks at the development of a community based amenity through the application of adaptive design thinking, cleverness in material reuse, and the tactical deployment of heterodox assembly methods as significant facets of a well-comprised architectural education. Strategies for how one may engage and enable a community to participate in the design and construction process, through means other than unskilled voluntary labor or simply making a donation, were uncovered and refined through this undertaking. The *SuperUse Pavilion* at the Oktibbeha County Heritage Museum, located in northeaster Mississippi in the small city of Starkville, figure 1 outlines the location and context for the project's development.

INTRODUCTION

The story of the Oktibbeha County Heritage Museum's Rain Garden Program is a story of community. The Museum itself is a volunteer run organization serving Oktibbeha County, which includes Mississippi State University. In 2009, faculty

from the Mississippi State University School of Architecture and Department of Landscape Architecture sat down with the museum board and members of the allied organization, Friends of the Museum, to discuss a simple problem of uncontrolled stormwater drainage seeping under the building and into the crawl space. The result of that discussion, and the several that followed, was the generation of a new vision for the museums development, poetically captured in the slogan, "Celebrating the Past While Embracing the Future". This newly developed vision for the Museum included a landscape design plan which would mitigate the drainage issues while adding interactive and educational landscape features to the museum grounds. The new landscape would achieve its educational intent via the demonstration of innovative stormwater management systems. Figure 2 outlines the various systems operating across the site.

The faculty involved quickly moved forward with students and Museum supporters to generate a phased approach to remaking the landscape of the Heritage Museum as a high-performance green infrastructure demonstration site. The plan called for the grounds to support students of all ages in having an interactive experience with facilities that did not exist anywhere in the region, while also serving as an example

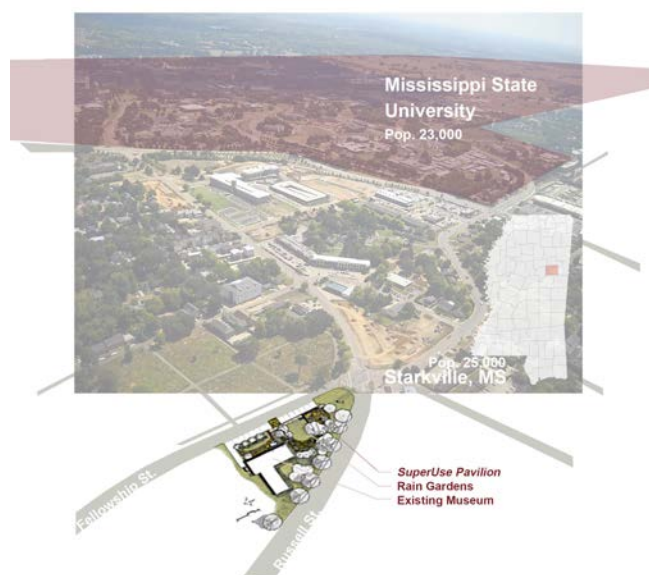


Figure 1. Project Context: State, City, Street, Parcel.

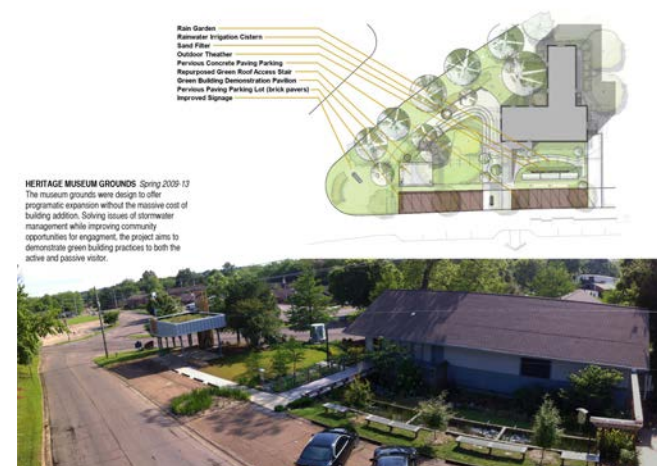


Figure 2. Stormwater Management.

for how future regional development could better manage stormwater. It is important to note that the region is known to have a chalk shelf covered by a thin layer of Yazoo clay, both of which contribute to very low levels of permeability thus making the demonstrations on this site potentially very valuable to future designers and builders.

Over the next five years, six faculty members from three departments worked with more than two hundred students to develop detailed plans, source materials, and implement the improvements. The museum board and Friends of the Museum worked to secure funding that ultimately equaled to over \$140,000.00 in value. The monies collected in this effort however only amounted to \$18,000.00 of the total amount which was largely comprised of pro-bono services such as construction equipment operation, engineering, architectural and landscape architectural design, transportation of materials and site work. In addition to the donated services, and where this project separates itself from a typical community project, was the donation of pre-existing building components such as a circular staircase, light fixtures, railroad rails, and even old parts of agricultural implements, all of which were repurposed for use in the project. The largest and most profound of these donations being a former gas station pump canopy that was built of steel and located two blocks from the museum site. This project, unlike most, was designed to engage the community through the incorporation of its cultural artifacts. Much like the Museum collection itself, the principle materials that allowed this project to be manifest were not purchased but rather given and rearranged to generate an entirely new way of seeing/experiencing the history and vernacular of north eastern Mississippi and the Black Prairie region. The designers used elements that had meaning to the local community to develop a language and aesthetic for the project while serving the performance criteria of high-performance stormwater management. Students, faculty, and community members worked together to resourcefully compose a landscape of both function and memory that was capable of telling a story about both the past and the future.

The improvements to the museum have created new life for the museum and its volunteers. Some visitors come to see the culture of the region and find out about green infrastructure, while others come to learn about green infrastructure and are exposed to the heritage of the county. Visits to the museum have doubled since the rain garden program began in 2009 and the Museum now offers programs on soil and water conservation to cub scouts, garden tours to garden clubs, and fieldtrips for schools. Beyond the green infrastructure improvements, the site offers opportunities for the community to come together. The site has an outdoor amphitheater which student organizations use for movie nights and faculty for lectures about the garden. The SuperUse Pavilion, which capped the project as the centerpiece of phase five, offers an eye-opening look into how adaptive reuse in architectural design and construction reduces energy use while offering



Figure 3. The SuperUse Pavilion as an event center.

exciting and unique spaces and places. The pavilion is available for families and organizations to use while enjoying and learning about the garden including examples like the AIAS Beaux's Art Ball pictured in figure 3.

PROCESS & REARRANGEMENT

The SuperUse Pavilion was conceived and designed as an act of contingency. Both the means and materials for construction were little known when the project was undertaken making for a truly open-ended design inquiry. Working in a mode of blended opportunism and improvisation, the design process is best characterized as an act of full-scale bricolage. Like with any work of design, the project team needed a place to begin. In the case of the SuperUse Pavilion, the beginning was prompted by the donation of a green roof system. Having witnessed the prior phases of the project, Hydrotech roofing stepped forward and offered a green roof as a way to showcase their product and contribute to the stormwater management demonstrations occurring on the site. The museum, with the green roof donation in-hand, set to work finding an appropriate location for the system. The inadequate roof structure on the museum meant that it could not be fitted to the existing building so an accessory structure was brought into the equation.

Beginning the fifth and final phase of the work, the design/build team knew that the accessory building (pavilion) had many functions to perform however, they also knew that funds would be very limited. What's more, the project team with the museum board and members of the Friends of the museum, had decided the museum desperately needed more visual presence on the street and in the city. The modest former rail depot building that housed the museum, while quaint and well-kept, did little to draw the eye of passersby. It was struggling to earn patronage and needed something new and more public to pull it out to the street where the public could interact with the grounds and eventual museum. While



Figure 4. Former fuel canopy being dismantled, cleaned, reinforced, and erected.

the design team considered the project necessities, members of the museum board and Friends of the Museum worked to gather \$15,000 for the project. Their hope, at this point unendowed to the design team, was to purchase a small premanufactured gazebo structure as the accessory building to host the green roof system.

The design team up to this point had been focused on completing the transformation of the grounds from an inert forecourt of turf to a living exhibition with gardens and beds that drew in the rain while adding depth and character to the experience of the museum. The new landscape thus prompted the team to consider a means of framing its beauty and functional properties, making the yet to be accessory structure (pavilion), the means by which this could be achieved. The new pavilion, through this adjustment in scope and programming was saddled with the tasks of not only supporting/displaying the green roof but also offering new forms of exhibition for the museum and most critically, framing and showcasing the stormwater management systems in action. Thinking about the many parameters of the project, it became clear that a small wooden prefabricated gazebo would not suffice. Looking to accommodate the needs of the museum and requirements of the new structure, an alternative means of project funding moved to the forefront of consideration. While it was obvious that no one would be writing a big check to support the project, the team knew that the community was interested in helping, and that if they had something to give, they would likely step forward. Mississippi, while consistently ranked one of the poorest states in the union, is also consistently the state in which more charitable donations are given than any other. This generosity and dedication to community would soon come into play to make the *SuperUse Pavilion* project a reality.

A NEW/OLD IDEA

Building on what the team knew about the character of the community the decision was made to solicit donations of materials. As one might expect, new, clean unused materials were difficult to procure. What the team did not anticipate however was that the community offered alternative materials such as remnants of building materials, components of abandoned structures and random parts and pieces of equipment and local historical artifacts for repurposing and appropriation. This discovery redefined the design process and reshaped the pedagogy employed by the faculty teaching the courses that would ultimately complete the construction.

The largest and most profound of the donated materials was stumbled upon one day by Professor Herrmann while traveling along University Boulevard in downtown Starkville, MS just two blocks from the project site. Driving to lunch, he noted a traffic nuisance being caused by the presence of a former fuel pump canopy obstructing flow in the parking area of the former Maroon and White service station aptly named for the Mississippi State University Bulldogs who wear maroon and white. The station's fuel pump canopy and drive/lot had long been converted to a new use; it was now a favorite hangout of students who frequented the pizzeria that occupies the former gas station building. The canopy, which obstructed the parking area traffic flow causing issues along University Boulevard struck him as the perfect solution to the project's major concerns and goals. The canopy was large, strong, demountable, and likely free if we could convince the owner that the space below would be better used as customer parking. Through conversation the owner eventually agreed that the canopy needed to be removed with the condition that he would bear no expense in the canopy's removal. Soon a small team, led by a local contractor who was building a nearby bank, was dismantling the structure and transporting it to be sandblasted. While the sandblasting was being completed an engineer was approached about the project and again services were offered pro bono in support of the project. It was determined that because the old fuel canopy was built of a lower carbon steel than current standards allow, some reinforcing and strengthening had to be done. In addition, anyone familiar with green roof systems understands that they generally require a more robust structural system to support the added weight, figure 4. Working with students and a certified welder, the structure was strengthened and eventually repainted and made ready for erection. By reconfiguring the structural members and adding stronger cross members to support the roof loads, the team was able to repurpose the pump canopy to serve as a much larger and more visually appropriate pavilion while also improving the pizzerias' parking and cleaning up the rather unsightly street front elevation.

With this element of the design resolved the landscape architecture and contracting students set to work designing and building the foundations while the architecture students

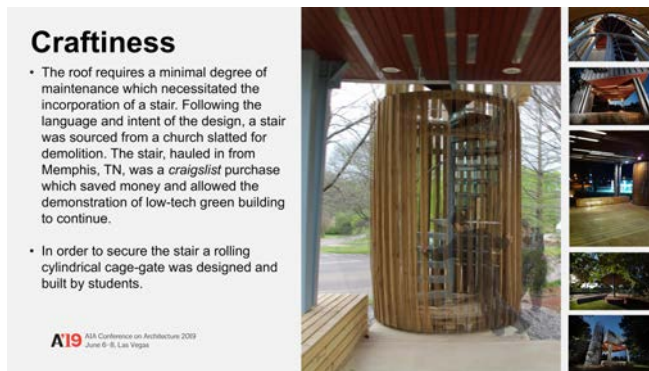


Figure 5. Rotating gate at base of stair.

designed and constructed the pavilions fascia and ceiling systems. With the foundations and floor in place the steel was quickly set in place and the roof and fascia were installed. As a means of accessing the roof for maintenance and viewing, a stair was necessary. Here again funding became an issue and once more an unlikely solution was found, a steel circular staircase was procured at a “friends and family” cost via a craigslist connection. The stair was reclaimed from a Memphis, Tennessee area church slated for demolition. To meet safety and security needs the stair was clad in wood fins and elevated to create a tower like structure that served as a focal point of the pavilion’s composition, Fig 5.

Working in the 90+ degree heat and humidity of Mississippi, the structure was erected, painted, and clad with students soon installing the green roofs built up layers and sedum plantings. A custom blanket of sedum plants was grown and delivered for the project by Hydrotech, in association with the Mississippi State University College of Agriculture who had performed detailed research on the optimal sedum species for the project climate. Eluding to the unseen greenery above, vines drape from the roof edge as part of a green wall. The planted wall is placed in alignment with the stair behind to emphasize the cross axis terminating one’s approach.

Figure 6 provides a view of how the SuperUse Pavilion was designed to display and make present the stormwater management systems at work. With foraged and donated building materials and a program of support/placement of a green roof, the pavilion responds to the situational logic of the site by offering a backstop to the gardens which are surrounded on three sides by busy city streets. The wedge shaped lot is bookended by the pavilions lower back edge which drops slightly to signify the terminus of the pedestrian grounds. In doing so, the central gathering space of the nearby museum lawn is reinforced as the hub of activity. Below the sweeping ceiling of the pavilion, integrated furniture including benches and a stage bound the pavilion floor offering a public venue for concerts, gathering, exhibitions, and other forms of outdoor event. Bands of acrylic replace ceiling boards and

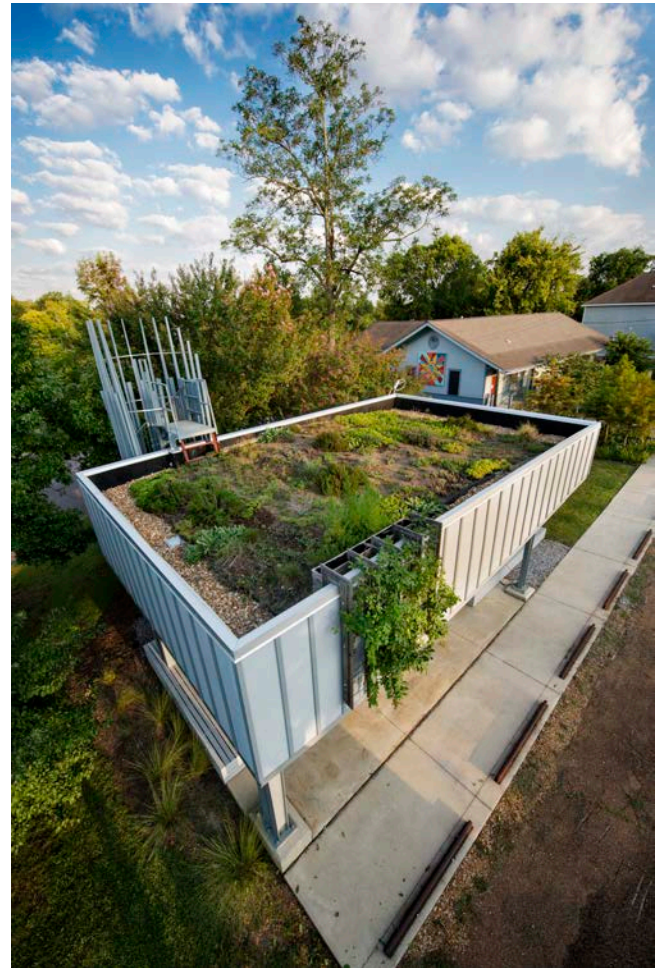


Figure 6. SuperUse Pavilion green roof and planted wall system hinting at what lies above.

bench board to offer low-level accent lighting which may be supplemented by spot and task lighting as needed by the user. Various rain sculptures are placed around the grounds to showcase the movement of water with a large scale rain sculpture made of an old agricultural tilling machine serving to receive the pavilions green roof runoff. Lastly, salvaged local historical artifacts were placed out and into the landscape as art installations/outdoor exhibits.

BIGGER PICTURE & AGGREGATED EFFECTS:

Abandoned infrastructure is everywhere around us and designers make decisions every day on the design of the most mundane artifacts of human civilization. From roads to sanitary sewers, infrastructure is often utilitarian at best. However, each element is an opportunity to either degrade or improve our environment. Taken in isolation, a single gas station awning is almost inconsequential, but collectively every awning in the U.S. is something to be considered. If every one of the 120,000 gas station awnings in the U.S. were to have a green roof like the one on the SuperUse Pavilion, they would be more than mundane infrastructure, they could be part of the green networks

of cities. Based on existing research, if the 120,000+/- canopies were green roofed systems, they would create 15 square miles of habitat, which is equal to about half the area of Manhattan. The habitat would be used by birds and insects while drivers would be filling vehicles twenty feet below. They would also help to improve watershed health by filtering pollutants and retaining over 3.6 billion gallons of rain per year. That amount of water could fill the Empire State Building over 14 times. With some irony, the canopies would also help to eliminate pollution by absorbing over 15 tons of carbon per year, or the equivalent of over 11,000 cars. Figure 7 illustrates the potential of this approach to fueling station design.

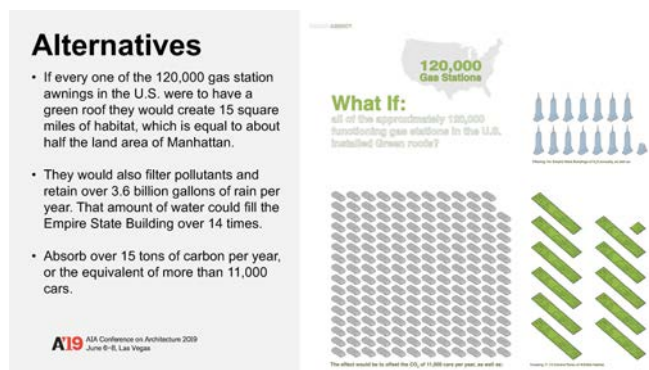


Figure 7. Policy changes could reshape the environment.

All evidence suggests the sag in annual American gasoline sales is not a fluke but rather a maintained trend that has been steadily held, if not made more rapid by EV and hybrid technologies in recent years. Subsequently the number of fueling stations around the country is declining as citizens turn to mass transit or other sources of transportation fuel. While industry statistics are a bit mercurial, in the US the number of gas stations has dropped by an average of 3,800 gas stations per year from its highest total of just above 205,000 stations in 1994 to approximately 120,000 today. This means approximately 80,000 former fueling stations are now either sitting idle in a state of slow decline or they have been raised to the ground to make way for new construction. These former fuel stations, while potentially problematic, offer a unique resource. Their owners often do not value them for resale and their scrap value is generally not worth the cost and effort to dismantle and haul away. In this lies a silver lining, because the canopies are often built of steel and made to be bolted together, they are just as easily unbolted and reused for a new purpose.

DISCUSSION & USER FEEDBACK:

The superuse methodology attempts to demonstrate that being environmentally accountable does not require additional expense only additional consideration. This technique was used to both educate designers and the public about how one might approach a project, or potential project, without

a previously held concept of the final aesthetic, budgetary requirements, and performative potential. The beginning of the work is an act of pure fiction, we made a project when one didn't exist by simply recognizing a need and deciding to address it. Everything after that leap of faith was driven by informed thinking, chance, and the notion that we all want this to happen and need to seek potential means and materials to manifest the project. Our team believes that in this way, any group, no matter the size and backing, could realize a similar work of design.

As evidence of our pedagogy and design philosophies potential, we offer the following user feedback:

I have watched the activity of MSU's faculty and students as they worked tirelessly to enhance the grounds around the museum. Since this project began, visitation to the museum has doubled with many of the visitors coming to view the landscape and water saving features demonstrated. This media coverage has made the museum more visible to the Starkville community.

— Mr. William Poe, Former member of the Board of Directors - Grounds Coordinator, Oktibbeha County Heritage Museum

Prior to the work of MSU faculty and students the exterior of the museum was very mundane. With the revitalization of the exterior, more visitors stop to see what the museum has to offer. Now not only does the museum tell the history of the local area, it is a showcase for best practices in landscape design and management. The students also solved a major drainage problem for the museum. Rain water settled under the museum, causing considerable interior problems. The museum now stays dry during the Mississippi rainy days. We at the museum feel very fortunate to have had the relationship with Mississippi State University to move the museum to a new level.

— Ms. Joan Wilson, Board of Directors - President, Oktibbeha County Heritage Museum

MSU students and faculty have transformed the Starkville-Oktibbeha County Heritage museum grounds into a showcase of innovative stormwater techniques and sustainable methods of stormwater management. This site is very important for our community as it does provide real examples for developers and contractors of alternatives to the traditional stormwater detention ponds. What was once simply an uninteresting exterior site is now a destination and an exhibit in of itself.

— Mr. Edward Kemp, PE City Engineer & Sustainability Coordinator, City of Starkville, MS

Collaborative Design: Supporting Lasting Social Change

ANN YOACHIM, Director & Professor of Practice
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NICK JENISCH, Project Manager
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Professor of Practice**
Tulane University &
Albert and Tina Small Center for Collaborative Design



Figure 1. Big Class Writers' Room, a collaboration between Small Center and 826 New Orleans.

INTRODUCTION

Deeply engaged and collaborative design is the hallmark of any good architectural design practice or institution. Private practices are increasingly interested in transforming their pro-bono and public work to meet the rigorous standards necessary to both strive for design excellence and effect meaningful change. This paper offers guiding principles that our practice uses as we work toward lasting social change through collaborative design.

The research, education, and design practice of the Albert and Tina Small Center for Collaborative Design focuses on working closely with New Orleans non-profit organizations and neighborhood groups to achieve their programmatic goals

through high quality design. This work supports bottom-up social change at the community scale by connecting partners and resources, expanding access to design services, and considering the public-facing aspects of all projects. Our partner organizations (typically non-profits in the New Orleans bring their project ideas to us, and we bring our design expertise to bear in collaboration, supporting New Orleans residents in imagining and pursuing projects that strengthen neighborhoods and contribute to a city shaped by its residents. Our applied research process and collaborative working model help to correct a tendency of designers to solely address spatial concerns and can highlight submerged social issues that must equally be addressed.

Each year, an assembled jury of past project partners, community leaders, philanthropy, and designers select projects by prioritizing partner ideas that have the potential to address inequity. We believe in participatory project scoping and framing prior to project selection to avoid the inclination to respond to non-design problems with design solutions. We work to assemble interdisciplinary teams who tackle challenges that reach beyond our design expertise, and sometimes our role is simply to convene conversations between people who have similar ideas or face similar challenges to find a shared path forward.

When selecting partners, the Small Center focuses on organizations that are deeply rooted in the communities they serve and address a wide range of issues ranging from affordable housing and homelessness to water management and food security. We use the design process as a means to convene new allies and supporters for our partner organizations, expanding their organizational capacity, while strategically including their current stakeholders, staff, and end users. Once a partnership begins, the team holds multiple meetings with the community partners to learn more about the proposed project. Within these initial meetings, we collectively define success for the project, outline the parameters of our work, and define goals within three categories: an appropriate design product, a stronger coalition for advocacy, and the education of young designers. All projects are developed in a collaborative process that engages the organization's constituents and stakeholders to better shape the final design and strengthen the organization's network.

This engagement and design process is one that we have been expanding and refining since the Small Center's founding in 2005. In that time we have collaborated on several hundred projects ranging from small scale design build projects to large scale urban planning. These collaborations have challenged and informed the way we work, and have shaped our guiding engagement principles: Build Consensus, Build Power, Build Accountability, Build Understanding, and Build a Bigger Table. This article uses project case studies to articulate these engagement principles, focusing on a key project known as Parisisite Skatepark.

CASE STUDY:

PARISITE SKATEPARK, NEW ORLEANS, LOUISIANA

Parisisite Skatepark is the only official skatepark in the City of New Orleans. Sited at the corner of Paris Avenue and Pleasure Street, the park is located in a historically underserved neighborhood and was initially created by a group of ambitious young skaters who took advantage of the vacant, under-utilized space. Word spread fast and the guerrilla skate park known as The Peach Orchard was established. The local skaters taught themselves how to design, build and maintain the skatepark until the city demolished the site citing public safety concerns. In 2010, the skaters started the Do-It-Yourself skatepark at the intersection of Interstate 610 and Paris Avenue (hence



Figure 2. Parisisite Skatepark entrance, New Orleans, Louisiana.

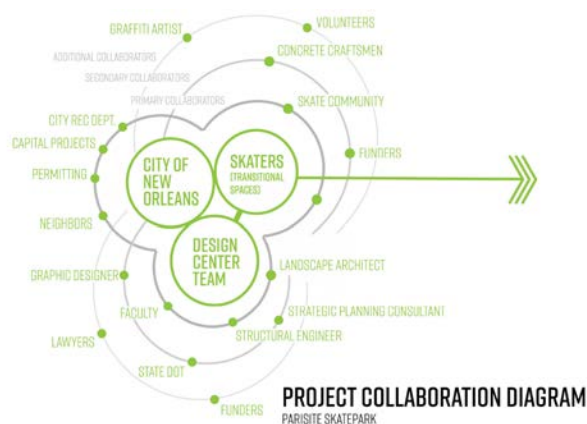


Figure 3. Diagram of skatepark project primary partners and the network of collaborators.

the name 'Paris Site'). With growing popularity, this informal public space once again drew the attention of city officials who questioned the legal implications of operating such a recreational space. The city made clear its plans to demolish the fledgling skatepark, which was under a federal interstate. The skaters approached the Small Center for technical and design assistance to protect the park and continue its build out.

Small Center's work began by building organizational capacity. The Small Center supported the skaters as they formed a nonprofit organization, Transitional Spaces. The Center increased the organization's understanding of regulatory and permitting processes and their capacity to engage and negotiate with public entities, lending legitimacy to the project. Transitional Spaces became strong advocates for the park, and not only convinced the city to declare the site an official skatepark, but succeeded in getting a set of ramps placed on the site through a donation by Red Bull/Spohn. Through time, strategic partnerships, and a series of state



Figure 4. Neighborhood presentation and feedback session led by Transitional Spaces members.

and local approvals, the grassroots public park became New Orleans' first official skatepark.

In addition to capacity building, the Small Center worked with Transitional Spaces to develop a vision for the park. The masterplan included specific designs for an entrance, signage, planting, benches and handrails to make the skatepark a welcoming community park space. Planted areas address the need for stormwater catchment and filtration from the skatepark and the highway overpass. Small Center constructed the entryway and various other park amenities on site and over the last few years Transitional Spaces has continued the phased buildout of more ramps and skateable features. In addition to creating a masterplan for growth, as well as providing capacity building for the non-profit, the Small Center helped the organization connect to legal, engineering, and other professional support necessary to grow Parasite into a fully operational public space.

I. BUILD CONSENSUS

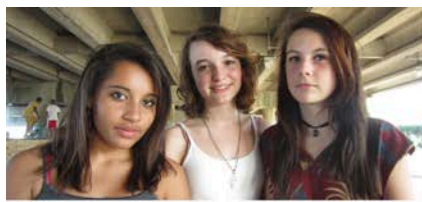
Going beyond the typical "neighborhood meeting" and prioritizing consensus building allows individual projects to serve as a means to address larger contextual problems. Building consensus requires the development of an inclusive design process that seeks multiple sources of input through diverse means as early in the process as possible and remains flexible enough to adapt to unknown outcomes. This inclusive design process offers an opportunity to ensure projects have buy-in from a range of stakeholders including clients (in our case non-profit organizations), end-users, neighbors and city

agencies. Deep engagement before the design conversation ever begins, and broad involvement during the design process itself bolsters the project's impact and long-term sustainability by ensuring it is addressing stated needs, and that all parties understand what is necessary for the project to succeed in the short and long term. This requires all organizations involved in the project to pull on their extensive networks of clients, collaborators, consultants, and advocates to engage in dialogue, shape the project and support its execution.

In Action

For Parasite Skatepark, successive design charrettes and community gatherings that adapted location, content, and engagement methods to the audience were at the core of consensus building efforts. We met with the skate community (skaters, bikers, the local roller-girl team) to discuss ideas both on-site and in a local artist's studio space. Brainstorming activities ranged from more traditional paper surveys and sketching sessions to forming play-dough master plans on large wooden site models. These sessions were often paired with existing on-site activities. Go Skate Day offered an opportunity for skaters and their families to test full-scale moveable prototypes while enjoying food and music.

More traditional "neighborhood meetings" were held at a city recreation center adjacent to the skatepark. At these meetings, presentations were led by skaters, extensive question and answer time was provided and input sheets offered an additional opportunity for neighbors to express their ideas and



They opened up a girls skate night and we decided to come. And we're just learning and nobody's judging us and everyone's helping us and it's really cool.
Taylor, Freda, & Kate

This is why we came. This is why we drove two and a half hours to this city, to be here at Paraisite. If you want to know what is going to bring people to New Orleans, this is what is going to bring them here.
Lee Trahan & Friends



Well, this is my first time here, and I'm with my family. I really like it. It's somewhere safe for the kids to be. We need more places like this in the city.
Toni Simm & Family

This place is great, built by skaters for skaters. So, it is everything we want because we built it ourselves. I'd love to see a bowl here sometime soon. We should get working on that!
Tommy "Bama" Stevens



Figure 5. Testimonials.

concerns. Fliers on porches and conversations with neighbors were used to spread the word about meeting dates, times and agendas. With each subsequent meeting, a recap of what had been discussed and leading ideas to date were shared so the dialogue could continue to build. This process allowed trust to be established and maintained between all parties. In addition, the city's Capital Projects team often attended events and meetings, gave input on proposals, shared regulatory challenges, and offered potential solutions. They were provided regular project updates, ensuring they were an integral part of the team and committed to the execution of the project. The city's active engagement allowed them to see the capacity of the partner, the importance of user involvement in decision-making regarding recreation spaces, and offered an opportunity to highlight the importance of high quality design and the important role of architects in public projects.

II. BUILD POWER

Simple recognition of multiple forms of expertise and inclusion of input from a range of voices allows a design process to build power. This requires a model of collaboration in which partners work together to frame the initial project before designs are ever created or policies implemented. It also requires open conversations about the power dynamics at play in any

given project or situation. Often in pro-bono work there is a dynamic wherein the designer is "giving" design services to a client who feels they have to be thankful for whatever they get. We start our project partnerships by talking through these dynamics, proposing a different vision of the design process, and clarifying each party's active role in shaping the project and providing feedback. This small step in the early part of the design process allows us to understand more clearly how we can build power and advocate for our project partners, and builds trust that enhances the project moving forward. It also signals to the partner our willingness to transfer power, a priority and necessity in our work. Often a focus on sharing information widely and decoding unnecessarily complex regulatory information are key components to building power.

In Action

For the city to grant legitimacy to the skatepark and allow further work to be done on-site, they needed an organization to coordinate and negotiate the ongoing development of the park's vision. In forming Transitional Spaces, the skate community had a legal entity but little knowledge of how to run or maintain a non-profit. Our team recognized that this problem did not require a design solution. Instead, we

brought in an ally from our network who was well-versed in running a nonprofit. After a multi-day bootcamp on nonprofit organizational management and connecting to our local university's legal services, Transitional Spaces was able to function more effectively as a partner to the city. This included the capacity to sign a memorandum of understanding committing to maintenance and upkeep of the park, which was a key condition of city approval. Additionally, we were able to leverage the power of our umbrella entity, Tulane University, and its involvement in the project to halt the city's demolition plans and convince them to take seriously both Transitional Spaces as an organization and their vision and commitment to the space.

Beyond the more dry and technical ways we worked to support and build power within our partner organization, careful thought and effort was put into who would speak at community meetings and events as the project spokespersons. We recognized there was a need to challenge stereotypical ideas about skaters and skate culture. Skaters presented the design work, precedents, and master planning, and spoke as experts in the park's creation. This served as an additional way to further legitimize and solidify the partner, and by extension the project.

III. BUILD ACCOUNTABILITY

It is a focus on accountability before, during and after a

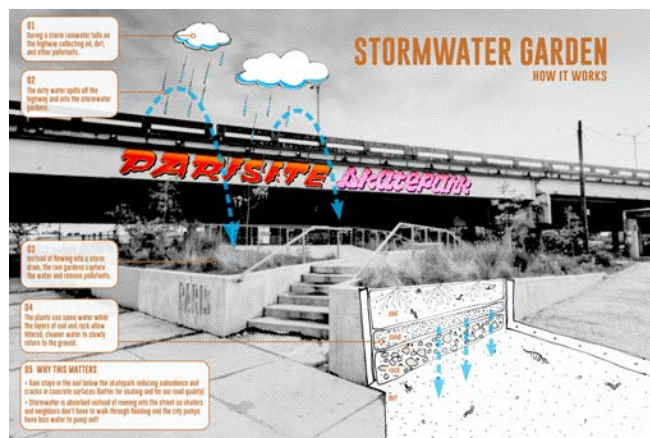


Figure 6. Educational signage installed on site.

design process that promotes trust and strengthens designers' ability to play an enhanced role in promoting equitable and inclusive development. Prior to a project, it is important to understand whether the collaborative team is properly framing the perceived problems or challenges that define the project. Early conversations with partners allow clarification of project goals and offer an opportunity to articulate roles and responsibilities. Often in the process of design, focus

can be captured by opportunities, but also diverted by challenges that grow beyond their importance or relevance to the actual goals of the project, and thus impeding progress towards the original goals. Again, open and frequent dialogue between the designers, partners, and stakeholders can help by revisiting and reaffirming project goals to ensure that everyone is working together to address the initially identified issues. Likewise, communication and collaboration with stakeholders and consultants can act as a check on incorrect assumptions or unseen opportunities. Developing metrics to assess the impact of design projects, both built and unbuilt, offers us another opportunity to ensure we are responding to the needs of our partner organizations after projects are completed.

In Action

Early in the design process our students focused their research and design efforts on skateparks and skateable elements. After several rounds of interviewing stakeholders it became evident that our design focus should also include stormwater management infrastructure and additional park amenities. The site, under a federal interstate, was in an ideal location for a skatepark in our hot and wet climate since it provided constant shade, and theoretically protection from the rain. In reality, the rain was a constant nuisance as it sheeted off the interstate and flooded through the concrete slab, making it difficult to skate. Managing the water from the interstate became a key driver of design and resulted in stormwater gardens being integrated into the park entrance. In addition, we interviewed many family members who were at the park to watch and support their children yet had no good place to sit while doing so. The master plan proposals grew to include more traditional elements such as benches, bike racks, native landscaping, and shade trees in order to augment the skateable spaces. At the same time, throughout the process we worked to understand priorities and capacities of the partners in order to narrow the scope of the project to what our design-build team and the project's stakeholders could achieve. Understanding the needs of stakeholders and nuances of the park, interviews from the design process

IV. BUILD UNDERSTANDING

We don't know everything. Incorporating a range of perspectives and expertise is an asset to the development of the project. Each of our projects includes interviews and research as an ongoing aspect of the design process. It helps to look at design problems from diverse perspectives, particularly non-design perspectives. Building understanding can also include helping our partners better understand their constituencies, whether it is those using the facility, maintaining it, or potential funders and allies. This process can uncover contradictions within a project's goals but can just as often produce new ways to frame or solve an issue.

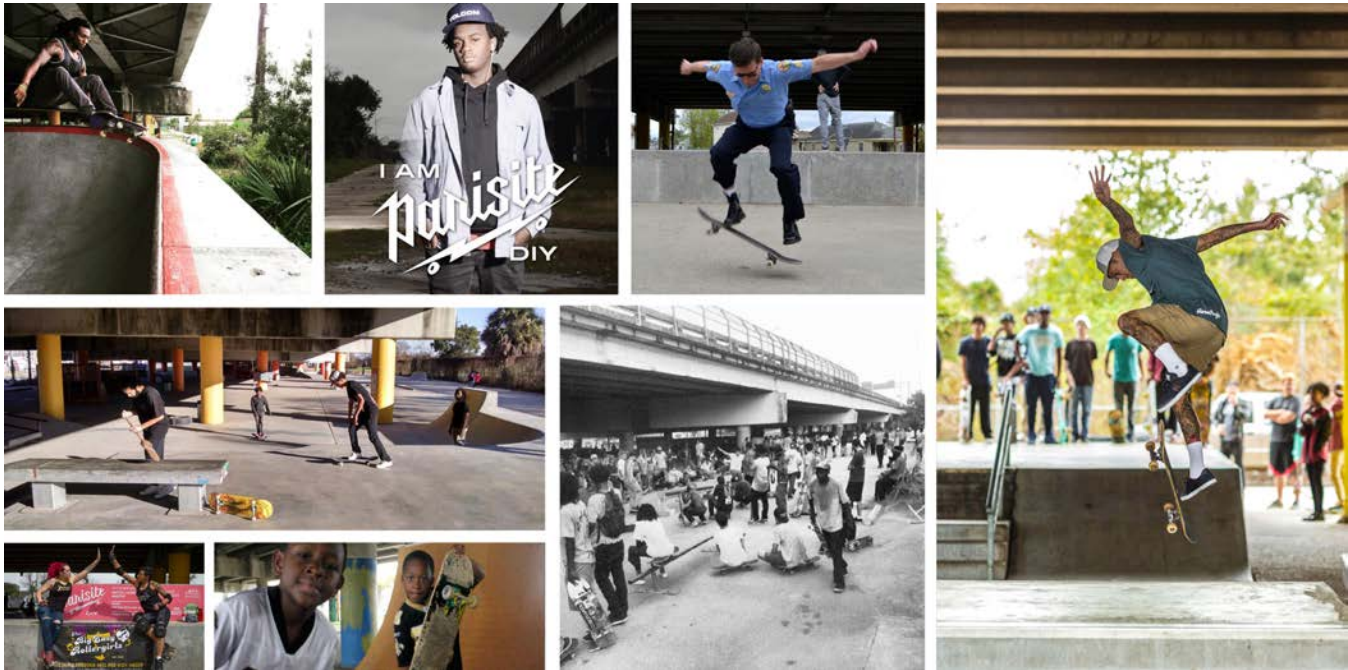


Figure 7. Parasite Skatepark in-use.

In Action:

In the process of master planning Parasite we discovered that the city had been gifted \$250,000 of skate ramps from Red Bull, but were paying to store these ramps indefinitely with no place for installation. The skate community initially balked at the idea given the style of skating those ramps were built for but eventually decided that including the Red Bull ramps in the early phases of Parasite's master plan was a way to solve problems, define space, and start to create a site strategy that could be built out over time. Furthermore, the phased buildout strategy that developed allowed the park to respond to changes in skater's input and needs and continue the D.I.Y. vibe that so inspired the early park community but in a city-sanctioned way. The decision to include those prefabricated pieces also had ramifications on the master plan that necessitated further conversations with neighbors about parking and construction timeline yet also built a considerable amount of attention and excitement about the quick progress taking place at the park.

V. BUILD A BIGGER TABLE

Throughout our work, Small Center's approach is to make every effort to find new perspectives and voices in our community, to keep listening, learning, and asking questions. During projects, we include as many voices as possible in the spaces where decisions are being made. We also strive to ensure that after the design (or design-build) process is done, the ideas and teachable moments in the projects live on. In a very basic way, this means we capture the process and result of each project in a booklet which is printed,

distributed, and available for download. Similarly, with our exhibitions we capture and share the information online through free pdf's or interactive websites. In our built projects, information sharing and outward facing education can take various forms from educational signage to on-site workshops and demonstrations.

In Action

For the design and build of the skatepark, collaborators included the startup skater organization, Transitional Spaces; Small Center design team; New Orleans Recreation Development Commission; the local skater community; a structural engineer; a landscape architect; neighbors; the Louisiana Department of Transportation; a strategic planning consultant; concrete craftsmen; a graffiti artist; funders, including the Surdna Foundation and Johnson Controls, Inc.; lawyers; and a small army of volunteers. The project design and build process was designed to create a roadmap for Transitional Spaces and a network of advocates and consultants to help with the funding, permitting, and construction of future phases. The site continues to be built out in a process entirely run by Transitional Spaces and approved by city and state agencies. We consider the continued development of the park without our active involvement to be one of the most successful aspects of the early design-build work.

In addition, the design of a stormwater management strategy on site speaks to a larger issue for New Orleans in general as it struggles to live with water. After construction, signage was

installed at the park that explains these features of the project and shares design intention. These signs provide an ongoing opportunity to educate and engage a diverse audience how the space functions and the importance of green infrastructure as a means to address stormwater management.

CONCLUSION

Community engagement is a key element of public interest design, which takes as its goal design as a tool for creating a better world for the people who happen to inhabit it. So we're interested in buildings, the built environment, and in space broadly, but we're really interested in the social use of space. Our hope is that this framework for engagement can thoughtfully interrogate social and physical context, challenge underlying assumptions, and design with, rather than for people. Just as spatial concerns cannot stand alone, the building blocks of this framework - consensus, understanding, accountability, power, a bigger table - are inherently interconnected. Consensus building requires recognition of power dynamics and transfer of power between designer and partner; building a bigger table allows and necessitates deeper understanding and a commitment to accountability supports both the sustainability of projects and growth of relationships. Commitment to all these principles in unison ensures that our projects are conceived and executed in collaboration with the people who will be most impacted by the work.

While Small Center is based in a university setting, we contend that our work in defining truly collaborative design processes can be translated to professional practice as an ethic and even in executing individual projects. We work to prepare the next generation of architects to design boldly while working collaboratively, and to bring a critical lens on equity to every design discussion. Private practice is dedicating more resources to pro-bono work, but in both this and the for-profit sphere, should focus on the time afforded to collaborative processes that not only shape design but the process of design itself. This is one way for the profession to avoid standing on the sidelines while battle for a more equitable society is fought, as Whitney Young, Jr. reminded us, and is necessary in the pursuit of design and projects that will effect meaningful change.

Beyond expanding who designers serve, increasing understanding of the role of design and shifting perceptions of who high-quality design is for, does a commitment to engaged practice shift the needle on the complex challenges facing our cities? If yes, how? If no, does our practice need to evolve? These are the questions we ask ourselves as we work in New Orleans and beyond. Through coalition building across organizational and socioeconomic divides, creation and distribution of accessible education and outreach materials, and collaborative design processes, our experience represented by the case studies above indicate

yes. We recognize these case studies are only a part of the picture. Our dedication to accountability and interrogating our own practice requires us to commit to deepening our understanding of impact through ongoing research and concrete evaluation. These results will inform our collaborative practice moving forward.

CHAPTER THREE

SHAPING URBAN DEVELOPMENT: HOUSING STRATEGIES AT DIVERSE SCALES

For the Shaping Urban Development: Housing Strategies at Diverse Scales participants, the question of whether design can effect social change led to a resounding yes! The form and experience of US American cities reflect the priorities of municipal governments, private developers and public advocates; however, these interests are sometimes in conflict. When design becomes a strategy for understanding the implications of policy initiatives, the outcomes of development proposals can be better predicted and improved. The following essays by three hybrid designers / educators / policy advocates—Angie Brooks, Sharon Haar, and Richard Mohler—highlight ways in which architects, educators, and students can advance innovative solutions for affordable housing and community needs by directing academic engagement to contribute to policy and practice.

In her essay “DENSECITY: Innovation in practice,” Angie Brooks explores how design can promote social change and heal those who have suffered homelessness in Los Angeles, a complex problem that, despite existing efforts, continues to grow. Sharon Haar demonstrates how a unique studio collaboration with city practitioners led to student projects at the University of Michigan, eventually influencing and informing the final design approach of several new developments in Detroit. Richard Mohler describes the complexity of the urban advocate space, with the need to rethink how advocates align for integrated outcomes that simultaneously address escalating housing costs, displacement, homelessness and the suburbanization of poverty-yielding long commutes and high transportation costs.

Challenging the polemic of the typical ‘bottom-up’ framework, Mohler states in his essay, “I often found it difficult, if not impossible, to discern which parties constituted the ‘bottom’ and which the ‘top’, despite their competing claims to be the genuine voice of grass roots democracy.” The three authors show possible ways to break down divisions between students and professionals, researchers and practitioners, as well as architects and advocates, allowing for a collaborative model that can more effectively challenge the status quo.

KATIE SWENSON, 2019 Loeb Fellow, Harvard GSD; VP
ENTERPRISE COMMUNITY PARTNERS

DenseCity: Innovation in Practice | A View from the City of Angels

ANGIE BROOKS, FAIA, Managing Principal

Brooks + Scarpa Architects, Inc.

How can architectural practice inform policy? How can design promote social change and heal those who have suffered through homelessness? How do city bureaucracies innovate and how can architects respond through their practice? The State of California, the City and the County of Los Angeles are requesting innovation from developers and architects through grants and proposal requests. Ballot measures are being passed to fund solutions; architects and developers can leverage this movement to innovate and create solutions for the future.

INTRODUCTION

Homeless populations are surging in Los Angeles (The New York Times, California Today, June 5, 2019) bringing the total un-sheltered homeless population in LA County up to 58,936. This is an urgent local crisis, and the voters of Los Angeles have approved several measures to tackle this problem:

LA's Measure H sales tax brings in \$355 million each year.

LA's Measure HHH is a \$1.2 billion bond to build permanent supportive housing (1,400 units are set to open in the 2019-20 fiscal year).

LA's Measure JJJ (which passed with nearly 64 percent of the vote), sets affordable housing mandates and hiring restrictions favoring local laborers on residential projects requiring a zoning change or an amendment to the city's General Plan. It also creates incentives for developers building near transit stops, codified under the Transit Oriented Communities Affordable Housing Incentive Program (TOC Guidelines). The guidelines are organized in a tiered format, depending on distance to transit (with additional density and less parking requirements, if the site is closer to transit). Projects that are 100% affordable garner more incentives and less parking requirements, aligning actual market need with code and our transit goals.

Unfortunately, even with all of this good policy, two glaring impediments still exist: an overall lack of affordable housing and a political structure that favors the singular over the needs of the many. The lack of supply is a direct result of the lack of comprehensive zoning reform throughout the city and the county. The political structure, a city of 'silos',

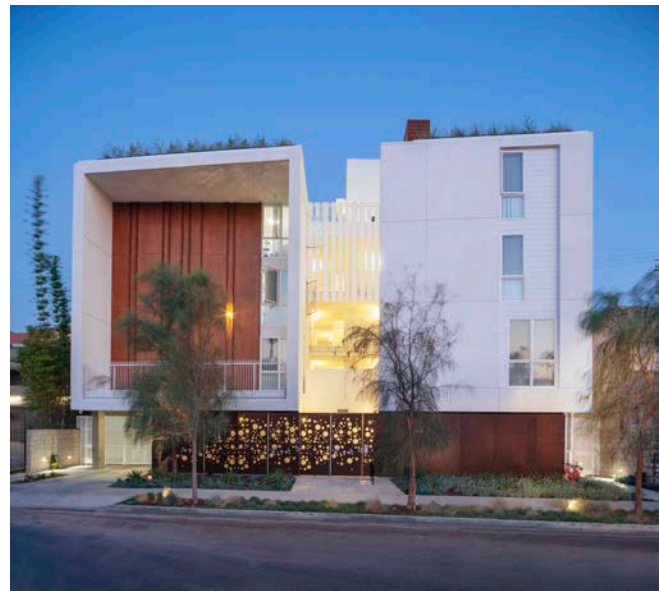


Figure 1. Gateway Apartments, 13368 Beach Ave, Venice, Ca. 21 one-bedroom apartment units. 100% affordable housing for homeless adults. 111 units/acre. LEED Platinum. Architect: Brooks + Scarpa Developer: Venice Community Housing Corporation. Utilized the local density bonus ordinance (# 179681) and the State of California's low-income housing tax credit program.

consists of council districts and various city departments, with no 'umbrella' of future planning that could weave all of the disparate needs into a cohesive, livable whole.

The origins of Los Angeles' urban fabric began in 1781 with a Spanish plaza, farms and homes along what is now known as the LA River. Over the next 200 years, the city sprawled outward and the zoning code created in the 1940s (which did not get updated), spawned a specialized industry of land use attorneys, entitlement experts and permit-specialists who are required to navigate the byzantine bureaucracy that controls the built environment. This, in turn, works hand-in-hand with the political structure of a 15-district city council, representing almost 4 million people, each of whom have their own 'planning deputy'; a process that entails first asking for permission from the local council member, then embarking on a sometimes 3-year process obtaining various 'entitlements' to develop or repair the urban fabric. In 1925 Aldous Huxley

famously wrote that Los Angeles was '19 suburbs in search of a metropolis'; now one could say we are 92 neighborhoods in search of a city. What will the city look like in 50 years? Or 100 years? No one knows. What is known is that the city needs current and comprehensive zoning that will allow architects and developers to build and renovate 'by-right', without entitlements. This very important work has started and is called 'ReCode LA', the first comprehensive revision of the City of Los Angeles' Zoning Code since 1946.

ARCHITECTURAL PRACTICE CAN INFORM AND SUPPORT POLICY

Architectural design is a significant piece of the solution, showcasing how elegant density, reduced parking and open space can contribute to complete streets and livable cities. Most often, design is a necessary determining factor when developers begin to assess how they will develop a property, given the myriad of options. How does one fit a required density of 245 units/acre on a 50' x 150' lot and meet high building-performance goals, within existing urban fabric? At Step Up on Fifth, this consisted of designing an innovative system of parking lifts (the first-ever permitted in the city), micro-units with wall-mounted murphy beds and passive design which incorporated two small open courtyards on a tight urban lot. Shading the south façade with a four-story perforated screen and the street façade with a series of water-jet cut aluminum screens, met design, cost and building performance goals.

In downtown Los Angeles, a large percentage of the urban core is zoned 'industrial', a blanket zone that precludes the ability to build housing on any of these lots. A large portion of these industrial zoned properties can actually be termed 'very-light', 'light' or 'moderate' industrial use, which is not mutually-exclusive to housing. Various industries can co-exist with various housing types and architects know how to mitigate concerns through design, materials and details.

Illustrating the possibilities inherent in the existing urban fabric, architects can help policy makers tailor zoning to new uses and new ways of living. Making connections between disparate elements to create a comprehensive whole is what architects do and cities can leverage this by teaming with designers on actual demonstration projects, on research proposals or on innovative ideas which attempt to solve seemingly intractable problems.

DESIGN CAN PROMOTE SOCIAL CHANGE AND HEAL THOSE WHO HAVE SUFFERED THROUGH HOMELESSNESS

The homeless population in Los Angeles increased by 12% last year. This is an urgent local crisis, and a 2005 state-mandated density bonus law (SB1818, providing incentives such as increased density and reduced parking) has not proven effective enough. More and varied policy is needed,



Figure 2. Step Up on Fifth, 1548 Fifth Street, Santa Monica, Ca. 46 micro-apartments. 100% affordable housing for homeless adults with mental and physical disabilities. 245 units/acre. 2011 AIA Top Ten Green award. Architect: Brooks + Scarpa Developer: Step Up on Second and A Community of Friends. Utilized the local parking code for reduced parking and the State of California's low-income housing tax credit program. Built below the height limit to lessen the impacts of discretionary review.

and developers are taking advantage of newer policies such as SB35 (2017), which streamlines the approval process for affordable housing projects in cities that are not meeting their housing obligations, AB2162 (2018) a by-right approval process for Permanent Supportive Housing and AB744 (2015) which provides further density and parking bonuses for affordable housing. Utilizing these new policies allows designers to create innovative homes that eschew the ubiquitous parking floor for a series of spaces that favor the social needs of the tenants over empty parking spaces. At The Six, a program of computer labs, community and recreation rooms, case management offices for support services and open space in a variety of scales and locations are all centered around a common courtyard. This protected open space is designed to be visually connected to the street while also being physically separate, bringing dignity to those who live here and becoming the social heart of this home, supporting the well-being of those who live here.

In the past, non-profit developers of affordable housing often required innovation and a high level of building performance because they own and manage their buildings for 55 years. California law will soon require every building owner to take the future into account. Environmental policy in California (AB32-2006) has been so successful that bottom-up codes are updated every 2 years and architects must design net-zero residential buildings by 2020 (three stories and below) and net-zero commercial buildings by 2030. The State of California must get 60% of its energy from renewable sources by 2030 with zero-carbon electricity by 2045.



Figure 3. The Southern California Flower Market, 755 Wall Street, Los Angeles, Ca. Mixed-use, 323 apartments over office, parking, retail, restaurants and a working flower market. 10% moderate-income units. 84 units/acre. Architect: Brooks + Scarpa Developer: The Southern California Flower Market. Obtaining entitlements to allow housing in the industrial zone, the new ReCode LA zoning update is anticipated to allow this type of project by-right.

What does this mean for architects? Practice must change and adapt...to accommodate this changing policy landscape. We have always believed affordability and sustainability are not mutually exclusive, and in fact, are necessary for high-quality design in practice; designing passive buildings and utilizing solar power are key, but how the building is designed spatially, its sense of place, still remains the most important element. If the place is not loved, it will not last. Luckily, the principles of passive design are also the principles we use to create well-liked spaces (access to natural light, air and ventilation!) and we try to always capitalize on this key fact. Utilizing various policy incentives and entitlements, we have illustrated how communities can be enhanced with new models of housing at various scales, densities and locations, ranging from a 13-bedroom shared house in the R1 single-family zone to a 46-unit urban-infill apartment house at a density of 245 units/acre to a new 323-unit mixed-use community that incorporates a working flower market in an industrial area of downtown Los Angeles, where it is currently still illegal to build housing.

CITY BUREAUCRACIES CAN BE CREATIVE AND LEVERAGE THE PRACTICE OF ARCHITECTURE FOR INNOVATION AND NEW IDEAS

New models of housing are needed if we as a society intend to house everyone in livable, dense communities. Homelessness is a crisis in Los Angeles County with nearly 59,000 homeless people and because the supply of new affordable housing is not keeping pace with the need, both the city and the county are reaching out to incentivize new models of housing. Our firm partnered with PlantPrefab, a modular prefab home builder and Community Corporation of Santa Monica, a non-profit developer of affordable housing, to develop NEST: a prefab modular, sustainable kit of parts. Scalable and adaptable on any combination of typical 50' x150' lots, it is a long-term solution accommodating different housing types. NEST is a small-scale version of a much larger concept to quickly provide housing for the homeless through prefab design innovation; a solution that is scalable and adaptable, giving homeless people a sense of dignity and shared social spaces on underutilized parcels of land.



Figure 4. The Six, 811 S Carondelet Street, Los Angeles, Ca. 52 studio and one-bedroom apartments. 100% affordable housing for homeless adults and homeless veterans. 153 units/acre. LEED Platinum. Architect: Brooks + Scarpa Developer: Skid Row Housing Trust. Utilized the local density bonus ordinance (# 179681) and the State of California's low-income housing tax credit program.

The modular kit of parts is scalable and adaptable within different housing types: 'Blue Jay' is for temporary housing, 'Dove' is for small-scale permanent and shared space housing and 'Osprey' is for permanent larger family units, all can be combined for different size sites and different neighborhoods. It is a long-term solution meant to bring housing for the homeless to market quicker (reducing costs) and transform the way communities can provide housing for the homeless through dignity, density and design. Potential plug-ins for energy and water are being investigated.

This type of cross collaboration between prefab construction, developer and architect/designer disciplines can result in new models and processes for bringing housing to the market. Architects can positively influence housing policy through design; politicians, policy makers and financial institutions can be a part of the solution as well. The State of California and local municipalities are providing pathways for designers, but, as always, more can be done. The architectural profession is best suited to illustrate the positive outcomes of various policy measures and we can be proactive in pushing for more effective solutions; this is why I became an architect and this is what a livable future requires.



Figure 5. NEST Toolkit, awarded \$1mil grant in 2019 for 'thinking outside the box to address homelessness throughout LA County'. A 'kit-of-parts' that can be built off-site and assembled quickly. Designer/Architect: Brooks + Scarpa. Team members: PlantPrefab and Community Corporation of Santa Monica. Tailoring the prefab custom home building industry to permanent supportive housing development for temporary and permanent housing at all scales and types on lot sizes from the typical suburban lot size of 50' x 150' and up.

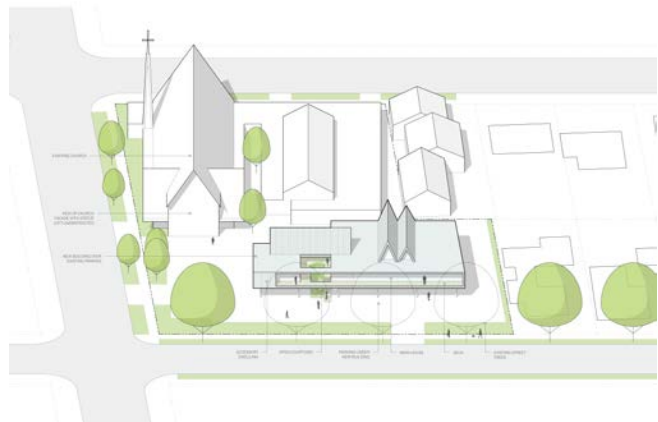


Figure 6. Concept diagram for a 13-bedroom shared house in the R1 single family zone, over an existing church parking lot. Architect: Brooks + Scarpa. Utilized the NEST Toolkit and the local Accessory Dwelling Unit (ADU) Ordinance to incorporate two kitchens in a large house for up to 16 unrelated homeless community college students.

Economies of Scale: Research-Driven Social Impact in the Housing Studio

SHARON HAAR, FAIA, Professor and Chair
University of Michigan

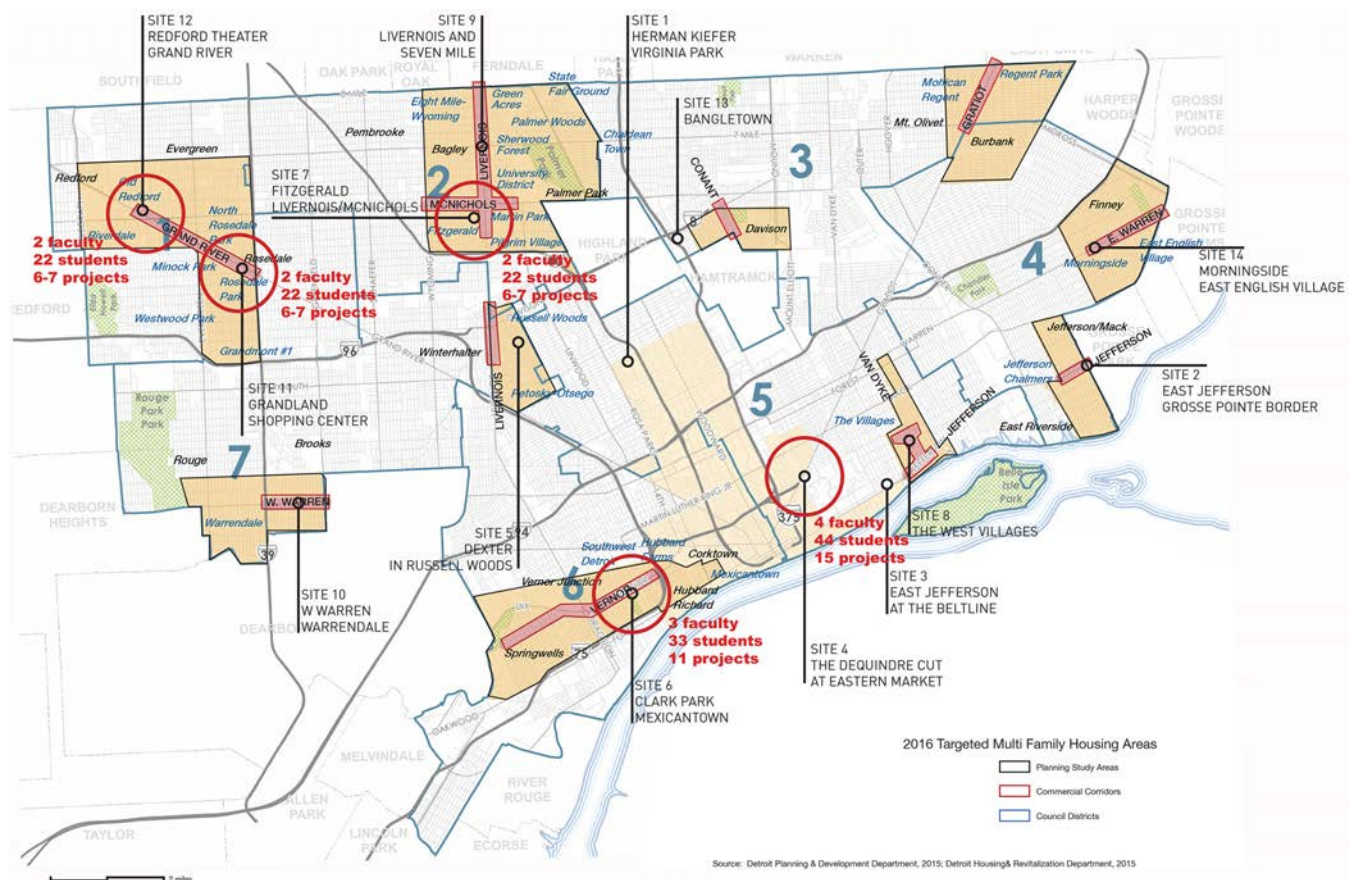


Figure 1. Relationship of Fall 2016 studio projects to Detroit's multi-family housing target areas and commercial corridor development. (credit: Lars Gräbner)

INTRODUCTION

How do we engage and envision “bottom-up” social change in the context of the academic design studio? What does it look like, and how is it taught? This paper shares a novel research-based studio engaged with large-scale projects in the city of Detroit that diverges from the small-scale, often design-build projects most often undertaken in community-based practice in the academy. Framed by the context of a research-intensive academic institution—the University of Michigan—the pedagogy asks how can we educate students in the potential for social impact and capacity-building at scale? In parallel, how can we leverage the research capacities

of a large student body to advance the study of affordable housing and neighborhood development in the context of a city such as Detroit?

Since 2016, the integrated housing studios at Taubman College at University of Michigan have been committed to projects chosen and driven by the Detroit Planning and Development Department (PDD). Each fall, over forty teams of students work in studios that look at multiple sites in the city slated for development in the near-term, testing urban design, program, building technology, and community capacity building through speculative, yet “client” driven work. Given



Figure 2. Maurice Cox presenting Detroit Planning and Development Department initiatives to Systems Studio students in the Taubman College Commons, Fall 2018. (Credit: Sharon Haar)

the rapid pace of development in the city, the research capacities of the institution, its faculty, and its students allow the directors and project managers of the PDD to test site scenarios before releasing RFPs to architect-developer teams. While not strictly “participatory”—although the students do extensive on-site research and often meet with community organizations and constituencies—the purpose of the studio is to leverage student research while exposing them to the real-world tensions between community needs and developer-driven housing production. Through iterative reviews and interactions with the PDD, students are required to work within market-driven constraints, while maximizing opportunities to rethink domestic arrangements, the economics of home ownership, and the potentials of new building technologies. The long-term “social impact” of such work is in the recognition of the agency of the architect to question contemporary models of housing development, the inevitability of gentrification, and normative social and urban configurations. The primary goal of the collaboration is to

spark innovation among prospective developers with outside-the-box design approaches that demonstrate how housing could contribute to the social and economic restructuring process of the city, while also contributing to the culture of design. The student concepts are intended to start a discourse of what inclusive housing can look like for future generations of Detroiters, how changing lifestyles can be sustainably integrated in new neighborhood developments, and how innovative development in Detroit can serve as an inspiration for other American cities.

DETROIT

Detroit’s 139 square-land mass was built out as a residential fabric of largely single-family homes intersected by the diagonal streets emanating from downtown and crisscrossed by miles of linear industrial corridors that formed the basis of the regional automotive industry. As Dan Pitera has demonstrated, the combined cities of Boston and San Francisco, plus the island of Manhattan (together amounting to 118 square miles and

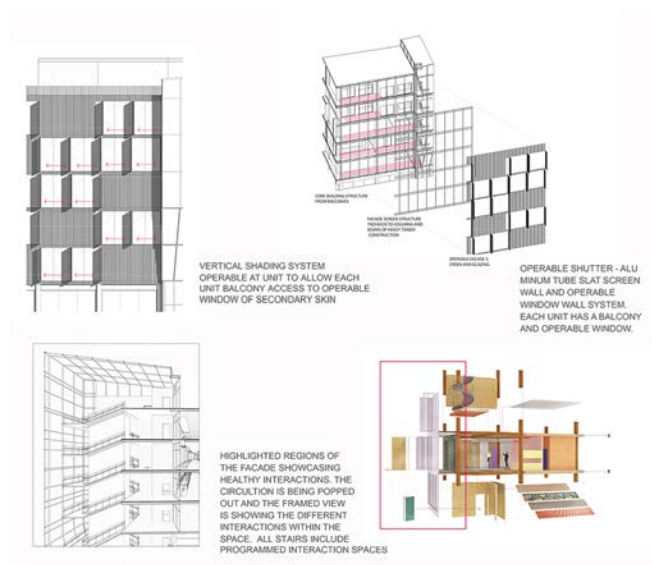


Figure 3. Flex Flats, excerpt from Integrated Building Systems submission illustrating façade study. Siobahn Klinkenberg, Patrick Linder, Liz Szatko, Tyler Whitney; faculty Kim Dowdell and U. Sean Vance, Fall 2016.



Figure 4. Systems Studio Final Review, Flex Flats (Siobahn Klinkenberg, Patrick Linder, Liz Szatko, Tyler Whitney; faculty Kim Dowdell and U. Sean Vance), Taubman College, Fall 2016. (Credit: Sharon Haar)

containing over 3 million residents) can be readily arranged to fit within Detroit's borders. While experiencing a modest increase in population over the past several years, Detroit has lost 60% of its population since its peak of 1.8 million in 1950, which has resulted in a massive redistribution of population and wealth from the city to its region. What does this look like on the ground? Pitera observes:

...a neighborhood's density that consists of mostly, if not entirely of individual houses lacks the portfolio diversity

needed to withstand small changes. For example, if four families leave an apartment or condominium block, the overall [urban] living experience may still feel dense. ...if four families leave a block of detached housing it may begin to appear that something is going wrong in the neighborhood. This block type has a harder time self-correcting and may even accelerate the abandonment process.

Additionally, despite the city's vast territory and population decline, it does not have an overabundance of housing stock. Abandonment left many properties in disrepair, much beyond hope of revival. There is a lack of affordable, quality housing. Extremely low-density housing makes neighborhoods unwalkable, hard to reach by the city's limited mass transit system, difficult to service, and devoid of retail and other services. Consequently, the Detroit Planning and Development Department, under the leadership of former director Maurice Cox, has been utilizing two strategies for urban redevelopment:

- To target development along significant urban corridors, building up what Cox refers to as "missing middle" – medium density housing and mixed-use development.
- To develop a strategy of major landscape propositions in support of this new development.

The majority of this work avoids the greater downtown area, which is the current focus of the "revival" of Detroit covered in the national news and is driven by big investors such as Dan Gilbert of Quicken Loans and the Illitch family, owners of among other entities, Little Caesars Pizza, the Detroit Red Wings and Tigers, and the Motor City Casino. Instead, the PDD's work is within the communities that have stayed through the city's decline, bankruptcy, and resurgence, a population that is overwhelmingly African-American. The work of the Taubman College studio takes up the first strategy, utilizing sites in the city's designated development areas and briefs designed to produce medium-density residential projects. (Figure 1)

COMMON GOALS OF THE SYSTEMS STUDIO

For the Taubman College students, all of whom are in the final year of their professional, Master of Architecture degree, the Detroit-focused Systems Studio offers an opportunity to engage public discourse around contemporary housing and neighborhood issues while working on "real" projects and sites slated for imminent development by both non-profit and for-profit developers. Their iterative research receives feedback from the city's planning director, PDD staff, outside experts, and potential clients at multiple contact moments, including midterm and final reviews. At the same time, they are encouraged to develop new and innovative housing concepts that can be tested outside of the academic realm. The overlap with a technology-intensive lecture class provides content and a feedback loop for exploration of sustainability from the scale

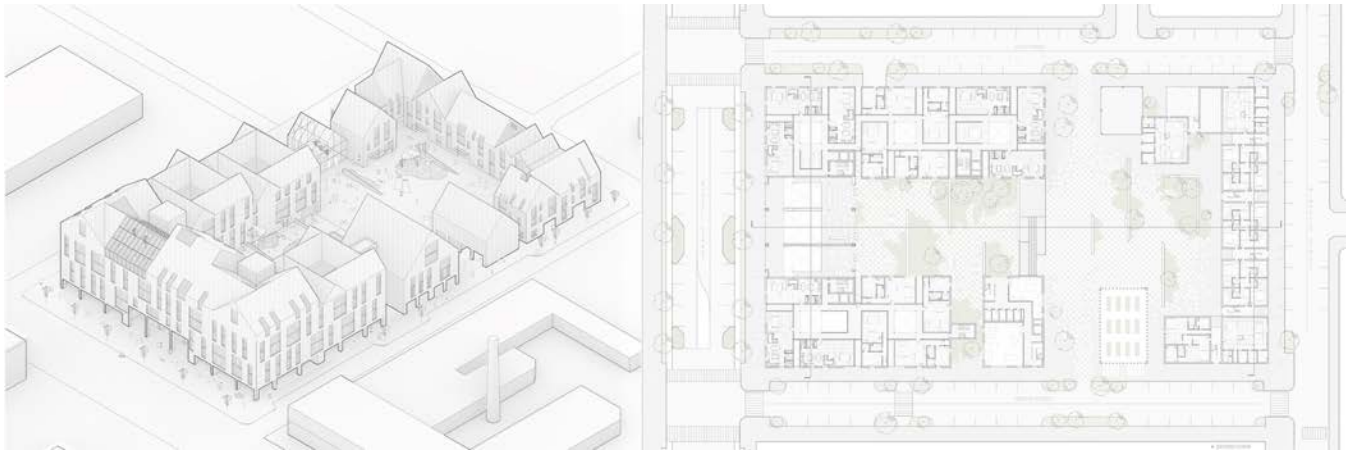


Figure 5. Russel Creative: A Live + Work Collective (Sarah Arthur, Brian Baksa, and Eric Minton; faculty Kathy Velikov and Jonathon Rule), Taubman College, Fall 2018.

of the neighborhood to the performance of the building. Finally, as they see components of their schematic designs taken up by developers and architects, they begin to understand the potential of their work to create social impact. (Figure 2)

Similarly, the Detroit Planning and Development Department is able to formulate specific research topics or questions that they would like taken up on select sites where studies of housing typologies and innovative solutions to building and structural technologies, program mix, and new domestic arrangements might be valuable to the informing of alternatives to off-the-shelf development pro forma. The student teams' ability to iterate multiple strategies can offer new insights on site specific qualities and values, informing efforts to, for instance, the development of form-based codes or prototypical solutions that can be applied on multiple sites. Because the students' work informs the writing of Requests for Proposals, their efforts do not replace the work of professional architects. Rather, they expand the capacities of a lean city department, while challenging the community of developers and their architects to recognize the value of innovative design.

STUDIO WORK

During the semester-long studio, student teams from ten or more studios develop design proposals for housing sites selected from the Detroit Planning Department master list. Each studio is focused on a specific design challenge such as senior living, multi-generational housing, live-work environments, healthy living, or cooperative housing. The student teams create a comprehensive urban and building strategy for each site, from initial analysis to early-phase design development. The studio is aligned with an integrative building systems class taught by a team consisting of an architect, structural engineer, and mechanical engineer, which requires the students to consider their projects in the larger context of urban and building sustainability and constructability. In

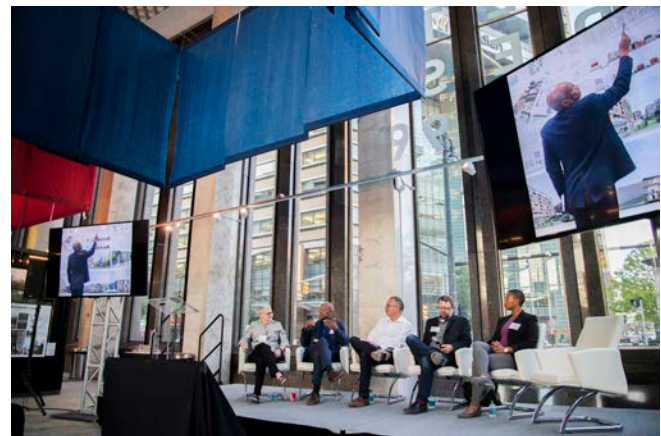


Figure 6. Taubman College sponsored panel at Detroit Design 139 in 2017. From left to right Sharon Haar, former Chair of the Architecture Program; Maurice Cox, former Director of Detroit PDD; Lars Gräbner, Systems Studio Coordinator; and Craig Borum and Kimberly Dowdell, faculty who have taught in the studio. (Credit: Taubman College)

addition to their final project presentation, each student team of three produces a comprehensive package demonstrating their approach to relevant zoning and building codes, program, water management, life-cycle costing, structural and mechanical systems, outline specifications, orientation and daylighting, building materials, wall sections, and neighborhood/site strategy. (Figure 3)

Here, two studio projects serve as examples of the myriad projects undertaken over the past three years.

Flex Flats, a project that took on multi-generational housing, put emphasis on an overall strategy of accessibility and the ability to age in place. The site strategy suggested the ability to undertake phased construction using modular components,

SYMPOSIUM

RE:

HOUSING:

DETROIT

Learn more or register here:
taubmancollege.umich.edu/ReHousingDetroit

THURSDAY, 6:30 P.M.
SEPTEMBER 12, 2019

Lecture Hall / Detroit Institute of Arts / Detroit

KEYNOTE LECTURE:
PAUL KARAKUSEVIC
 Karakusevic-Carson Architects

IMAGE: Fall 2018 studio course project, "Russell Creative," designed by Masters of Architecture students Brian Baksa, Sarah Arthur, and Eric Minton.

FRIDAY, 9:00 A.M.
SEPTEMBER 13, 2019

A. Alfred Taubman Wing Commons /
 Art & Architecture Building / Ann Arbor

SPEAKERS:

Joshua Akers, U-M Dearborn
 Abir Ali, Independent Consultant
 Angie Brooks, Brooks + Scarpa
 Maurice Cox, Incoming Commissioner
 for Planning and Development City of Chicago
 Julie Eizenberg, Koning Eizenberg
 Antonio Fiol-Silva, SITIO
 Robert Fishman, U-M Taubman College
 Ignacio Galán, Barnard College
 Lars Gräbner, U-M Taubman College /
 VolumeOne
 Matiss Groskaufmanis, U-M Taubman College
 Rasmia Kirmani-Frye, Independent
 Consultant, Fund for Public Housing
 Matthew Lasner, Hunter College
 Marc Norman, U-M Taubman College
 Anna Puigjaner, MAIO / Columbia GSAPP
 Eunice Seng, The University of Hong Kong /
 SKEW Collaborative
 Jonathan Tate, OJT
 Elizabeth Whittaker, Merge Architects

ORGANIZED BY:
 Sharon Haar, U-M Taubman College

URBAN COLLABORATORY
 UNIVERSITY OF MICHIGAN

Graham Foundation

POVERTY SOLUTIONS
 UNIVERSITY OF MICHIGAN

DETROIT

Figure 7. Re: Housing: Design Symposium, Fall 2019. (Credit: Taubman College)

and the team was particularly interested in the design of a building envelope for maximum solar shading. The proposed program included shared amenities, from highly public at street level to widened corridors on residential floors, encouraging interaction across units designed for varying family sizes. (Figure 4)

Russel Creative gave greater attention to site strategy and the organization of a live + work collective living environment organized around shared resources and spaces at both the unit and community scales. Utilizing the figure of the single-family home, it simultaneously enlarges and connects the singular units into a perimeter block that organizes a communal courtyard with select opportunities to open up to the neighborhood when desired. Ground floor commercial and neighborhood spaces allow the envisioned artist- and artisan-residents of the collective to share their work with the community. (Figure 5)

IMPACT

In public lectures Cox demonstrates how student projects have influenced the final design and approach of several new developments, including one by the Detroit-based developer The Platform for a five-acre project that broke ground along the Dequindre Cut in 2018. Additionally, the studio has several externally facing components. Selected projects are exhibited in Detroit Design 139, a biennial exhibition with broad reach to Detroit audiences through workshops, panel discussions, and tours. (Figure 6)

In fall 2019 the college sponsored a symposium—Re: Housing: Detroit—that brought together practitioners, academics, and policy experts from cities including Los Angeles, New York, New Orleans, and Hong Kong to contextualize the work occurring in Detroit, with particular emphasis on medium-density housing, urban development protocols, and new domestic organization. Presented to a large in-person and a streaming audience, the day-long event attracted architects, urban planners, and academics across the US. (Figure 7) With a five-year Memorandum of Understanding in place between the university and the city, the goal is to produce a comprehensive publication that situates the student work and contemporary projects into the larger national conversation around “missing middle” density housing.

ENDNOTES

1. The studio is coordinated by Lars Gräbner and an accompanying building technology course is coordinated by Mick Kennedy. Since fall 2016 the studio has been taught by: Craig Borum, Claudia Wigger, Mick Kennedy, Kit McCullough, James Witherspoon, Joel Schmidt, Kim Dowdell, U. Sean Vance, Kevin Adkins, Daniel Jacobs, De Peter Yi, Kasey Vliet, Christina Hansen, Kathy Velikov, and Jonathan Rule.
2. Dan Pitera, “Urban Scratches: Revealing Hidden Histories & Instigating Future Traditions,” in *Detroit Collaborative Design Center, Syncopating the Urban Landscape* (Detroit: University of Detroit Mercy, 2014), 4.
3. See Robert Fishman, “Detroit and the Acceleration of History,” *Log* 37 (2016): 32-64.
4. Pitera, “Urban Scratches,” 4-5.

Bottom-Up, Top-Down, and the Messy Reality of the In-Between

RICHARD MOHLER, AIA, Associate Professor; Principal
University of Washington & Mohler + Ghillino Architects

INTRODUCTION

This paper reflects my recent five-year experience as a practicing architect, educator and advocate embedded in the contentious fray of public discourse regarding housing and land use policy in Seattle. During this period I testified before city council regarding proposed housing-focused land use legislation, presented my analysis of that policy in professional and community forums, published opinion pieces in the *Seattle Times*, coordinated the housing advocacy efforts of AIA Seattle, conducted graduate-level design studios focused on the topic at the University of Washington, and presented the student work (often with students) in venues throughout the city. I ended this period of local advocacy in 2018, when I was appointed to the Seattle Planning Commission, although I continue to help coordinate AIA Seattle's advocacy efforts as co-chair of its Public Policy Board.

This paper is also a response to the premise behind the symposium title: "Bottom-Up Social Change". The notion of a purely "bottom-up" or "top-down" effort to upend the socio-political status quo does not align with my recent experience. In fact, I often found it was difficult, if not impossible, to discern which parties constituted the "bottom" and which the "top", despite their competing claims to be the genuine voice of grass roots democracy. Further, I found a number of instances in which a "top-down" effort engendered a wave of unified "bottom-up" activism that was previously disconnected, if it existed at all.

Though I am not an expert in public policy matters, a limited review of current academic and professional literature tends to confirm my recent experience. Policy experts generally acknowledge that the distinction between bottom-up and top-down advocacy is murky at best and most efforts employ a combination of both strategies¹. This is particularly the case as an effort expands beyond an individual project to more sweeping public policy concerns at the city or regional scale. The point of this paper is not to advocate for either strategy but, rather, to illustrate that the reality is a messy "in-between" that often conflates the two.

More importantly, this is a call for architects and educators to enter the fray of public policy discourse for several reasons. First, it is an opportunity for us to leverage our unique skill sets in untangling what are often convoluted, contradictory and

fiercely contested issues. Second, it engages us in a process that will ultimately determine the policy frameworks within which we will be working. Third, not doing so risks distancing us from the decisions that will have the greatest impact on our built environment and could further call the relevance of our discipline into question.

SEATTLE HOUSING CONTEXT

Like many cities, Seattle has experienced a meteoric rate of growth and the transportation and housing affordability challenges that come with it. However, these challenges are exacerbated by a number of context specific factors. Seattle is bounded by mountains and water. This, coupled with a state growth management act, mandates that the city grow by becoming denser rather than expanding outward and it is doing so at a faster rate than any other major U.S. city². Seattle has experienced the largest percentage population growth of any of the country's 50 largest cities over the past decade³. It has the 8th most expensive rental housing market, the 7th most expensive home ownership market and the third highest number of people experiencing homelessness (behind only New York and Los Angeles), despite being only the 18th largest U.S. city by population⁴.

A third of Seattle metro households are cost burdened by housing and a fifth are severely so, meaning that these households spend more than half of their income on housing⁵. The county in which Seattle is located has a current deficit of 156,000 rent-restricted housing units, according to the King County Affordable Housing Task Force. This deficit is anticipated to expand to 244,000 rent-restricted units by 2040⁶. Assuming a conservative estimate of \$300,000 per unit, this shortfall will require roughly \$70 billion in funding over the next 20 years, an even larger amount than will be spent on regional light rail and bus rapid transit in the same timeframe.

SEATTLE RESPONSE

In September of 2014, then Seattle Mayor Ed Murray assembled a committee of 28 volunteers including developers of market-rate and affordable housing, contractors, architects, environmental and social justice advocates, labor, tenant and neighborhood representatives and experts in private and public financing to develop strategies to address Seattle's housing affordability crisis (figure 1). After eight months of deliberations



Figure 1. Seattle Mayor's Housing Affordability and Livability (HALA) Committee (Image credit: City of Seattle)

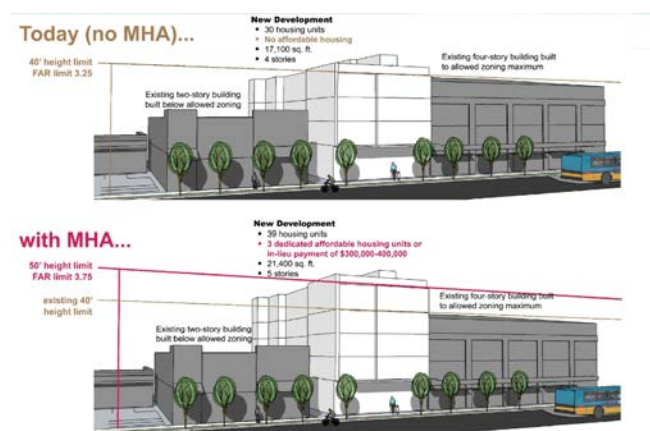


Figure 2. Mandatory Housing Affordability (MHA) provides additional building height and floor area ratio (FAR) in exchange for affordable housing units on-site or payment into a city fund to build affordable housing (Image credit: City of Seattle)

the committee released the Housing Affordability and Livability Agenda or HALA. HALA is a suite of 65 recommendations covering land use and building code reform, tax incentives, financing and funding strategies and tenant protections – all focused on addressing the housing crisis.

But one recommendation, leaked to a columnist for the Seattle Times, nearly doomed HALA before it was even released. The recommendation to allow for duplexes and triplexes in the city's single-family zones – which accounts for three quarters of the city's residential land – was described by the columnist as a war on Seattle's neighborhood character⁷. That recommendation was also a tacit repudiation of a deal made in the mid-1990s. Then, in response to the newly enacted State Growth Management Act, the city embarked on a neighborhood planning effort that gave neighborhood community councils – representing single-family homeowners almost exclusively – the latitude to dictate urban growth strategies that preserved one house per lot in areas zoned "single family". The resulting outcry to the recommendation compelled the mayor to promptly rescind it for fear of losing the entire effort to homeowner discontent.

However, the mayor's own HALA-inspired program, known as Mandatory Housing Affordability, proved controversial as well. MHA is an inclusionary zoning strategy that is simple in concept but extremely complex in its implementation. In exchange for increased development capacity (typically an additional floor), developers are required to provide rent-restricted housing units at 60% of area median income on-site or pay into a fund that the city will use to build affordable housing at the same income level (figure 2). MHA applies to all multi-family and commercial projects citywide and, in tandem with other city programs, is anticipated to produce roughly 20,000 units of affordable housing over the next decade.⁸

Despite resistance from some members of the market-rate development community as well as a large swath of Seattleites resistant to urban growth and density, MHA passed relatively quickly in downtown and other high density commercial districts. However, in districts within or adjacent to single family neighborhoods it was a very different story.

NEIGHBORHOOD RESISTANCE

The mid-1990's neighborhood planning effort mentioned above resulted in what came to be called the "urban village" growth strategy. This strategy locates housing density in close proximity to transit and commercial services in nodes ranging from the most dense, urban centers, to the least dense, residential urban villages, which are surrounded by single-family zoned areas that are off-limits to multifamily structures. There are 17 such residential urban villages citywide and one of them, Wallingford, is where I live.

The mayor's MHA proposal called for a modest upzone across all urban villages, in exchange for including a stipulated number of affordable units on-site or funding for them to be built elsewhere. This included residential urban villages that bordered or, as in the case of Wallingford, contained parcels zoned single-family within it. It was this proposal to upzone the single-family parcels within Wallingford's urban village boundary to multi-family that engendered vociferous resistance from homeowners.

To express its discontent, the homeowner-dominated Wallingford Community Council at one city outreach event staged a mock funeral for "the neighborhood voice". (figure 3) This ambitious piece of political theater condemned the city's "top-down" planning strategy as a death knell to the neighborhood voice and, indeed, to democracy itself. The protesters cast their city council representative, who chaired the committee sponsoring MHA, as the grim reaper seizing the neighborhood's soul as they ceremoniously carried a coffin into the city proceedings. While city staff in attendance insisted the coffin be promptly removed, the point had been made: Top-down government policy had killed the bottom-up neighborhood voice.



Figure 3. The Wallingford Community Council stages a mock funeral for the “Neighborhood Voice” outside a City of Seattle HALA/MHA public outreach event (Image credit Doug Trumm)



Figure 4. A tale of two yard signs. The Wallingford Community Council denounces the HALA/MHA upzones (left) while another neighborhood group, Welcoming Wallingford, supports them (right) (Image credit – Rick Mohler/Steve Hurd)

However, there is more than one narrative in this drama. On the left (figure 4) is a Wallingford Community Council yard sign found throughout the neighborhood denouncing the HALA upzones. On the right, is a yard sign found throughout the neighborhood in support of them. The latter is from an alternative neighborhood group, Welcoming Wallingford; in the interest of full disclosure, I was a founding member. Welcoming Wallingford supports the upzones as a strategy to allow more people of varying incomes to have access to the frequent transit, walkable commercial district, parks and schools that the neighborhood abundantly provides.

These competing yard signs illustrate the difficulty in identifying bottom-up versus top-down strategies and the groups that promote them. The Wallingford Community Council denounces the “top-down” land use policy for

ignoring the community voice yet it has maintained a decades-long legacy of dictating local land use policy to suit the will of its single-family home owning membership. Welcoming Wallingford, on the other hand, is an ad hoc collection of renters and homeowners that supports what is clearly a “top-down” land use proposal as a legitimate and necessary challenge to the socio-political status quo. Which is bottom-up versus top-down?

Welcoming Wallingford is only one of many pro-housing grassroots groups that emerged to advocate for HALA’s “top-down” recommendations following its release. It appears that HALA gave a voice, or at least a platform, to many who felt they had neither beforehand. However, it did something more. It created alignments between those advocating for housing affordability and other previously misaligned grassroots advocacy groups including those advancing equitable transit, cycling, neighborhood greenways and broader environmental concerns such as climate change. HALA compelled these groups to realize, for the first time, that housing and density were central to all of their missions. Again, which is bottom-up versus top-down?

ACADEMIC ENGAGEMENT

In addition to my own involvement in the public policy debate, I’ve employed University of Washington architecture design studios in the interest of exposing students to the messy fray of public policy-making. The studios also serve to expand and enhance the community dialogue by providing creative illustrations of what these policies might entail. One such studio was launched the fall quarter of 2015, just three months after HALA’s release. The studio focused on the Wallingford urban village and tasked students with envisioning strategies

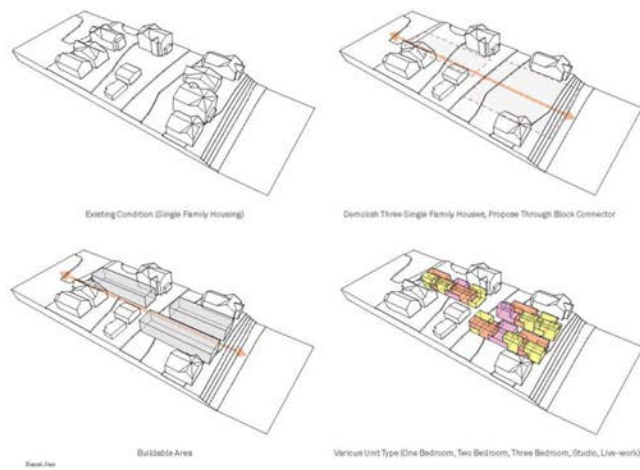


Figure 5. Neighborhood pedestrian thruway with increased housing density. (Image credit – Xiaoxi Jiao)

to increase the quantity and variety of housing types while enhancing the quality of life for all neighbors.

A proposal by Xiaoxi Jiao (figure 5) recognized that many blocks in the northern parts of Wallingford are quite long – some in excess of 600 feet – reducing the neighborhood’s urban porosity and walkability. In response, she proposed a new network of intimately-scaled green pedestrian thruways bisecting the unusually long blocks. The walkways are lined with small, interlocking 1, 2 and 3 bedroom units with roof decks instead of yards. This provides an entirely new pedestrian experience within the neighborhood while adding up to twenty new housing units per block.

A project by Siyu Qu (figure 6) proposes a new courtyard housing type to be located along arterial streets that nearly triples the density of its half-block site. In the interest of increasing pedestrian access and light and air to the units, the project introduces a new network of alleys to the neighborhood which, again, increases porosity while increasing light, air and privacy for adjacent parcels.

Students presented this work to members of the HALA committee in the final review and at two city-sponsored HALA outreach events where they were able to engage with neighbors on a one-on-one basis. I presented the work at a Seattle Town Hall event to about 1000 members of the broader community.

A year later, UW faculty colleague Elizabeth Golden and I taught a studio to test the specific, proposed MHA land use code changes in several other residential urban villages throughout the city. The studio worked closely with Blokable,



Figure 6. New courtyard housing on arterial street. (Image Credit Siyu Qu)

a Seattle modular pre-fab start-up, and their in-house designer, Yasaman Esmaili, to explore the impact of modular pre-fabrication on housing design.

In one urban village a project by Carolyn McGunagle (figure 7) proposes clusters of stacked and rotated modular flats that ensure privacy for each unit while maintaining neighborhood scale at quadruple its existing density. In a different and denser urban village, a proposal by Christian Reyling (figure 8) explores the potential of modularity in a five-story micro-housing block adjacent to an existing south-facing community garden. Elizabeth, Yasaman and I presented this work at AIA Seattle’s annual Housing Design Forum in 2018 to an engaged audience of residential architects that was not as informed of these proposed policies as one might expect⁹. The studio was also referenced in a Seattle Times article on emerging architectural approaches shaping the city’s residential landscape¹⁰.



Figure 7. Stacked and rotated modular pre-fab flats on corner site with alley (Image credit – Carolyn McGunagle)

NEXT STEPS

As mentioned, I was appointed to the Seattle Planning Commission in 2018. The commission consists of sixteen volunteers from a range of disciplines including planning, architecture, transportation, public health and housing. The commission is appointed by the city council and mayor and it advises both parties as the steward of Seattle's Comprehensive Plan. However, the commission has no legislative authority as this is the purview of elected officials.

While individual members of the Seattle Planning Commission are precluded from lobbying on behalf of outside advocacy groups, the commission itself is now advocating for increased land use flexibility, not only in Seattle's residential urban villages, but in all of its single-family zones. In December 2018, the commission released a report, called "Neighborhoods for All: Expanding Housing Opportunity in Seattle's Single-Family Zones," that offers a series of broad observations and potential strategies for gently increasing density in single-family neighborhoods city-wide¹². Along with similar efforts in Portland, OR and Minneapolis, MN, the report is garnering national attention as the social equity and environmental sustainability implications of single-family zoning are becoming increasingly apparent.

The commission is currently engaged in a community outreach effort that will entail presentations and discussions with scores of community councils, grass roots advocacy groups and other interested parties city-wide over the next six months. The goal of the outreach effort is to gather concerns, ideas and aspirations from as wide an array of stakeholders as possible. This information will inform the next phase of the commission's work, which is to develop a more specific set of urban design frameworks and policy tools that will view this issue through the combined lenses of social equity, sustainability and livability. The intention is to inform and influence city council and the mayor's office to take action on reforms to single-family zoning as they consider the next round of major updates to the city's comprehensive plan. The

comprehensive plan, in turn, will guide specific land-use policy in neighborhoods city-wide.

In the winter quarter of 2020 I will teach a research design studio and companion seminar at the University of Washington titled "The Rise and Fall of Single-Family Zoning". The seminar will delve into the socio-political context in which single-family zoning came into existence and its roots in racial and class exclusion and it will acknowledge that this legacy continues today, regardless of our intentions. The studio will advance and apply strategies outlined in the planning commission's report while investigating similar efforts in other cities, including Portland's Residential Infill Project and Minneapolis' 2040 Comprehensive Plan.

I'm currently working closely with planning commissioners and commission staff in developing the curriculum and establishing guidelines for studio deliverables. The goal is to have the studio at least inform and, ideally, be part of, the next phase of the commission's work. As in previous studios focused on these issues, the enthusiasm, energy, creativity and, perhaps most importantly, visualizations that students bring to these efforts are invaluable in fostering an inclusive conversation that helps to erode the understandable fear of the unknown often at the core of one's resistance to change.

CONCLUSION

Returning to our original theme, one might ask whether this partnership between the planning commission and university is a bottom-up or top-down effort to drive social change. I could make an argument either way, but in the end, is this the question one should be asking?

One could argue that the commission, given its level of expertise and appointment by elected officials, constitutes the "top". On the other hand, the commission's charge is to ensure that elected officials adhere to the mandates of the city's comprehensive plan, and its focus on equitable development, regardless of the political pressure they face. The academy could also be construed as the "top" although, in this case, much of the work will be conducted by students who, by nature of their age, may be most impacted by the policies that are ultimately put in place.

What other constituencies are we striving to serve and is there an unrepresented "bottom" that we hope to speak on behalf of versus the voices of privilege that identify themselves as such? Can we, as academics and professionals, be honest brokers among these competing interests or do we engage more as an act of self-preservation focused on shaping the environment within which we work?

The fray of public discourse regarding any policy change, and especially those at the scale mandated by the significant social equity and environmental challenges we face, is confusing, complex, nuanced, non-linear and iterative. What matters more than a distinction between 'bottom-up' and 'top-down'



Figure 8. Stacked modular pre-fab micro-housing overlooking and existing community garden (Image credit – Christian Reyling)

social change is the efficacy of the policy being considered when viewed through the lens of social equity, that genuine and effective community outreach strategies are employed and that the outreach has a meaningful and measurable impact on the proposed policy.

What also matters is that architects, educators and students enter the fray and engage in the discourse, one which will inevitably expand and become more heated as our housing crisis does the same on a national level. We have much to offer. As architects, we understand the need for a collective vision, that change is constant (it's our line of work) and that every decision entails a trade-off between competing interests and priorities. We are respected for this knowledge and we should leverage this respect, from "bottom" to "top", within our communities.

ENDNOTES:

1. Biswambhar Panda, "Top Down or Bottom Up? A Study of Grassroots NGOs' Approach," *Journal of Health Management*, 9, 2, (2007): 257–273
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3. Benjamin Kumpf, "Bottom-up, top-down and outside-in: Cultivating innovation at UNDP", *Medium*, July 3, 2018, <https://medium.com/@UNDP/bottom-up-top-down-and-outside-in-cultivating-innovation-at-undp-7d4935c56f9c>
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