# Promoting Equitable Climate Adaptation through Community Engagement

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The design process is an ideal structure for community participation and a uniquely nimble method of problem-solving through experimentation—an iterative cycle of research, analysis, prototyping, stress-testing, and refinement to reach a final product. Accordingly, design offers powerful tools for tackling complex social, ecological, and cultural issues. It can identify and define problems, breaking them into discrete parts to propose new solutions. It can also help communicate ideas by enabling people to visualize new possibilities and the steps to enact change. These tools present an opportunity to put communities at the center of efforts to confront the challenges of climate change. At its best, climate-adaptive design seeks to ensure that communities thrive in the face of both known and unknown impacts, augmenting and modifying physical, natural, economic, and social systems.[1] The challenge is to advance such design in ways that are attentive to the people who inhabit places and interact with those systems.

Design interventions of nearly any scale will inevitably intersect with social structures and other invisible forces at play. The success or failure of urban climate-adaptive design cannot be understood strictly on the basis of how such augmentation performs against climate conditions. Rather, design must fundamentally consider the human experience now and in the future. Creating flourishing ecosystems is crucial to climate adaptation, but the core aim of climate-adaptive design is to protect inhabitants and improve people's lives. By understanding the conflicts and synergies associated with these values, there is an opportunity to utilize design as a means of understanding the trade-offs associated with climate adaptation interventions. This article highlights some of the lessons and practices that Van Alen Institute has cultivated as part of its mission to advance design in the public realm.

## Equity in Climate Adaptation

As is true of many other forms of economic investment, climate-adaptive design has the power to advance equity or inequity. Climate change impacts are not only unbalanced geographically, with certain swaths of populations at greater risk than others, but they may also have an economically disproportionate impact, with large numbers of those who are

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1    McIntyre, M.H. "A Literature Review of the Social, Economic and Environmental Impact of Architecture and Design," Government of Scotland (August 10, 2006), available at https://www2.gov.scot/Publications/2006/07/21095819/11.

at greatest risk having the fewest resources to recover.[2] The result is that climate change presents unique challenges to communities that are already the most vulnerable to other shocks and stressors, and thus may be less prepared to adapt. These populations are often the most socially and politically marginalized and do not have the tools or direct lines of access to advocate for themselves. By ignoring these factors, design can inadvertently exacerbate inequity by reserving solutions for those with the resources for advocacy and by deploying interventions[3] with downstream impacts that further marginalize vulnerable communities.[4]

Climate adaptation efforts by practitioners and city leaders cannot ignore the power of design's potentially disparate impacts if they are to be successful. It is only when the various components that lend to a community's adaptive capacity are examined, acknowledged, and accounted for that design interventions can be tailored to the communities they aim to help. The lenses of distributive equity and procedural justice enable climate-adaptive work to be embedded in a community in a way that is contextually appropriate, providing the flexibility to accommodate climate impacts over time. While design cannot by itself deliver social services, an equitable approach to design can be part of a suite of services that enhance a community's adaptive capacity. As Shamar Bibbins, senior program officer for the environment at the Kresge Foundation put it, "[c]limate adaptation without equity provides interventions but not transformative solutions. Equity takes the long-view."[5]

The question of what it means for a project to be equitable presents a complex planning and policy challenge. While many people believe in the sentiment, there is little consensus on its parameters. Moreover, the vulnerabilities that drive a need for distributive equity translate into a diversity of priorities across stakeholder groups, many of which conflict or are in competition for limited resources. Regardless, because climate models predict consistent and accelerated climate threats to the global community, the process of ensuring equitable outcomes in adaptive design projects is an increasingly impossible challenge to ignore.

Inequitable design projects can, in part, be attributed to a lack of community inclusion in their process. This problem has been described as procedural justice, which acknowledges that fair participation in a process is as important as the outcome.[6] Approaches to procedural justice in design processes, known in design practice as participatory design, affirm the notion that a community's participation in the design process will benefit both the community and the efficacy of the outcome. Participatory design aligns with the notion that those who will be directly impacted by a design intervention should have material involvement

2    Roy, J., Tschakert, P., and Waisman, H. "Global Warming of 1.5 Degrees (Rep. No. 15)," Intergovernmental Panel on Climate Change (May 23, 2018), available at https://www.ipcc.ch/report/sr15/chapter-5-sustainable-development-poverty-eradication-and-reducing-inequalities/.

3    Marsh, L., O'Neill, S., and Lorenzoni, I. "Where Do We Go From Here?" *Climate Change and Law Collection*, 9(1) (2013), pp. 7-25. doi: 10.1386/macp.9.1.7_1

4    Reckien, D. et al. "Climate change, equity and the Sustainable Development Goals: an urban perspective," *Environment and Urbanization*, 29(1) (2017), pp. 159–182. doi: 10.1177/0956247816677778

5    Author interview with Shamar Bibbins, senior program officer for the environment, Kresge Foundation.

6    Wood, B. et al. "Socially Just Triple-Wins? A Framework for Evaluating the Social Justice Implications of Climate Compatible Development," *Sustainability*, 10(1) (2018), p. 211. doi: 10.10.3390/su10010211

in shaping that intervention. As a pragmatic submission, the process aligns with the notion that those who will adopt an intervention are best suited to define the criteria for success.[7]

At a minimum, the participatory design process can make accessible the rationale for interventions, which can diminish a perceived lack of transparency into how decisions are made. Democratic modes of participation encourage participants to compromise, as the public assemblage of varying priorities within and across stakeholder groups makes it easier to view personally unfavorable decisions objectively. As an optimal outcome, the participatory design process can result in tailored, favorable, and effective solutions that lift the adaptive capacity of the intended community. While the process of engagement alone cannot accomplish this, a community's active involvement in climate-adaptive design projects plays a significant role in lifting the adaptive capacity of a community.

That said, community engagement is challenging to execute. It can require additional government staff and significantly protract the project time-horizon, requiring resources governments may not have. Engagement activities must be conscientiously timed in order to fold community voices into early stages of the process, but project timelines are subject to shifts and delays due to funding, as well as changing administrative and political priorities. In addition, comprehensively identifying and consulting with stakeholders requires its own set of resources. Meaningful engagement can thus seem unrealistic for cash-strapped cities, or even simply inefficient. However, climate-adaptive projects without a concerted effort to equitably involve the community run the risk of jeopardizing the investment by producing design projects that are short-sighted and incomplete. Engagement is a tool to discover and address the economic, geographic, and political vulnerabilities that ultimately either help or hinder a community's adaptive capacity.

## Community Engagement and the Design Process

In addition to spatial and material preferences, the design process has the potential to reveal a community's underlying values, as described by designer Liz Ogbu of Studio O, based in Virginia.[8] The active engagement process can serve as a research opportunity for the design process, revealing the community's attitudes, values, interests, needs, and concerns. Active engagement can play a role assessing community vulnerabilities, both those directly climate-related and those otherwise exacerbated by it, presenting opportunities to ask the community to determine how resilience is defined in its specific context.[9] A participatory vulnerability assessment through active engagement is the key to designing holistic, impactful, and sustainable climate solutions.

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7    Stangle, M. and Szostek, A. "Empowering Citizens Through Participatory Design: A Case Study of Mstow," *ACEE*, 1 (2015), pp. 47-58, available at http://www.acee-journal.pl/.
8    Sherman, D. "How Community-Engaged Design Is Changing Development," *Next City* (May 18, 2016), available at https://nextcity.org/daily/entry/what-is-community-engaged-design.
9    Chandra, A. et al. "Building Community Resilience to Disasters: A Way Forward to Enhance National Health Security," *Rand Health Quarterly*, 1(1) (2011), p. 6.

Four key engagement typologies comprise a successful community engagement strategy:[10]

- Activities that aim to *raise awareness* about a particular project or problem, outline access points for feedback, or increase knowledge about an issue;

- Activities that *build relationships*, establishing trust and alignment of goals between the community, practitioners, and city leaders;

- Activities that *solicit guidance* from a small cohort of key stakeholders to shape the community's involvement in the decision-making process; and

- Activities to *spur co-development* of design elements.

Engagement across these categories, deployed at various points in the design process, can serve to illuminate risks, stressors, strengths, and opportunities within the community. Case studies across these typologies are described below, followed by a discussion of applicability to climate-adaptive design.

## Raising Awareness

Activities in the theme of raising awareness establish a baseline knowledge of a topic, issue, or project. Raising awareness is a two-way information exchange, where an engagement facilitator may solicit information from or may share information with the community. This exchange is a preliminary assessment of current conditions–the community's characteristics, challenges, and opportunities. Information is typically disseminated through flyers, surveys, and town halls.

By example, in 2014, a local government in England was interested to understand how its residents wanted to use over $1.3 million that had been allocated to community development.[11] A government agency partnered with a local theater to host a talent show to gather the community and share information about what the process would entail. Community members were encouraged to sign up for a performance slot or to bring family and friends to watch. This stage of increasing familiarity about a project is key for setting up the participatory process for success. This example successfully identifies a method of delivery that is informational and relational, building trust among members, and warming members to the experience of interacting. As a research tool, it provides a forum to gather initial ideas about what residents see as opportunities for neighborhood development.

10   Corbett, E. and Dantec, C. "The Problem of Community Engagement: Disentangling the Practices of Municipal Government," Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, Association for Computing Machinery (2018), p. 574. doi: 10.1145/3173574.3174148

11   Kelly, V. "World's End and Lots Road Big Local," *City Living, Local Life* (September 22, 2014), available at https://citylivinglocallife.wordpress.com/2014/09/25/video-worlds-end-and-lots-road-big-local/.

## Building Relationships

Building relationships elevates informants in the phase of raising awareness to active collaborators. Activities in this theme build on the existing conditions and goals identified through the awareness process and begin connecting relevant actors to goals and tasks. In order to build relationships, practitioners investigate the opinions, sentiments, and values connected to an issue, digging into the motivations that underlie them.

In 2015, President Obama's Hurricane Sandy Task Force implemented a project called Rebuild by Design (RBD). RBD was a design competition to initiate innovative processes and policymaking solutions to protect communities from future floods. The U.S. Department of Housing and Urban Development (HUD), Van Alen Institute, the Municipal Art Society, the Regional Plan Association, and New York University's Institute for Public Knowledge were partners on the project. Through an equitable and inclusive framework, based on geographic and demographic diversity and the involvement of one or more design teams in the area, RBD selected five locations around the New York region to focus community engagement: Asbury Park, New Jersey; Bridgeport, Connecticut; Far Rockaway, Queens; the Lower East Side of Manhattan; and Staten Island's North Shore.

In each place, local residents, nonprofit staff, business owners, and government officials were engaged in planning a public event centered on the theme of "resilience." Planning meetings were closely coordinated with design teams to ensure that the ultimate public event was uniquely tailored to the community and tied to proposed themes and strategies. Planning participants in Asbury Park, for example, emphasized the historic divide between the city's east- and west-side communities as a key barrier to citywide resilience. Engagement took the form of a parade that connected their physical resilience with social resilience. This example recognizes that engagement serves as both an opportunity for the community to identify its vulnerabilities and as a platform to begin to address them. As a research tool, it gave practitioners additional insight into interrelated vulnerabilities their own technical review could not provide.

## Soliciting Guidance

While raising awareness and building relationships aim to reach as many community members as possible, engagement practices also scale down to smaller focus groups in order to advance project goals and enhance the overall engagement strategy. Activities in this category seek to distribute decision-making power among key stakeholders. Participants help to distill community needs and shape the communication between practitioners, city leaders, and the target community. Fairness in this distribution of power requires cultivation of balanced and representative perspectives. It requires careful attention to demographic groups that exist within a community and any existing power dynamics.

In the town of Utsunomiya, Japan, community members, volunteer designers, and private sector contributors took it upon themselves to develop a plan for revitalization.[12] The local government had reached a stalemate in efforts to implement interventions, and disenchanted community members had lost faith in the ability of city leaders to address their concerns. The special interest group decided to take the project on, as they believed community perspectives might propel the project forward.

In tandem with a series of engagement opportunities for the broader community, the group engaged smaller cohorts of local residents to gain deeper insight into community preferences and challenges. To attain geographical diversity, the group divided the district into five sampling areas and assembled a cohort of 20 individuals from each, seeking to understand problem areas in the city on which to focus. To go a step further in establishing a balance of power, the group prioritized inclusion of women, a group that had been historically excluded from decision-making, which tended to be male-dominated and male-driven. Representatives from a local women's group were brought into the planning process and were tasked with leading the design team on tours through the city. Ultimately, this resulted in a significant uptake in local women's participation in, and contribution to, the planning process.

As a research tool, community engagement at this scale facilitates a more rigorous vetting of community impressions that practitioners have developed from other engagement activities. Engagement of smaller cohorts also expands access to politically or socially marginalized groups. As an iterative research model, the participatory design process lends insight into the interrelated vulnerabilities that impact the future success of climate-adaptive design interventions. The participatory assessment developed across these three themes results in a design team with a firm grasp on community vulnerabilities and priorities, and a public with trust and investment in the process, and real-time opportunities to address those vulnerabilities.

## Co-Developing Design Elements

Activities in the theme of co-development of design invite the community to give specific feedback on design elements for inclusion. Practitioners use methods such as design charrettes and rapid prototyping to understand community preferences and reimagine uses of space. For example, the government in Auckland, New Zealand commissioned a team to redevelop Waitemata Plaza on the city's waterfront. The selected design team's proposed solutions turned the space into a series of temporary activations. All of the activations provided a basic amenity that drew the public in to linger in the space. The design team gathered community feedback through interviews on site, social media, and surveys. Additionally,

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12   Sanoff, H. "Democratic design: Participation case studies in urban and small town environments," VDM (2010), available at https://www.researchgate.net/publication/316605037_Democratic_Design_Case_Studies_in_Urban_and_Small_Town_Environments.

video monitoring allowed the team to observe uses of the space over time. Ultimately, the final design was positively received.[13]

## Conclusions

Climate adaptation efforts cannot overlook the power of design to increase or decrease inequity. Participatory design as a research process allows for a more pluralistic approach[14] to this work and makes for a more holistic process to increasing a community's adaptive capacity in the name of community resilience.

That said, community engagement in climate-adaptive design practice does have its limitations. At their best, engagement efforts can aggregate the diversity of perspectives that exist in a population. They cannot safeguard the balance of distributed benefits of interventions, however. As a method of procedural justice, engagement can inform how such benefits should be allocated, but the specific process of allocation is a separate category of equitable pursuit. In addition, participation does not address the tension between the democratic ideals that motivate it and the strength of individual preferences. In theory, participants would acknowledge that democratic processes require some form of compromise but the process itself cannot correct for that in practice. Finally, it is possible that the community may not want to be engaged.

Van Alen Institute is a 125-year-old not-for-profit that uses design to catalyze positive change in cities. Over the last several years, Van Alen has focused on climate-adaptive projects including: Rebuild by Design; Changing Course, a design competition to reimagine a more sustainable Lower Mississippi River Delta; Shore to Core, a design and research competition inviting professionals to reimagine downtown West Palm Beach as a dynamic, resilient waterfront city; and Keeping Current, a series of initiatives seeking innovative solutions to protect South Florida's six million residents from the potentially catastrophic consequences of sea level rise. Through these initiatives we have led, explored, and tested different models of community engagement. While our approach to community engagement is constantly evolving, we have learned that it requires earnest and early communication with not only marginalized or impacted communities, but among stakeholders at every level. For this reason, we focus on inter-disciplinary solutions, tapping a broad stakeholder-base. We believe inclusive planning and implementation is essential to developing innovative, valuable, and future-looking infrastructure.

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13  Savic, B. "Community Engagement in Urban Planning & Development (Rep.)," Winston Churchill Memorial Trust (October, 2015), https://www.wcmt.org.uk/sites/default/files/report-documents/Savic B Report Final_0. pdf.

14  Wood, B. et al. "Socially Just Triple-Wins?" (2018).