

VACANT TO VIBRANT: CREATING SUCCESSFUL

Green Infrastructure Networks

Sandra L Albro

Washington, D.C.: Island Press. 2019. 190 pp.
paper, ISBN: 9781610919005

Reviewed by Judith Otto
Department of Geography
Framingham State University

The hypothesis of this empirical study is that scattered vacant lots in post-industrial cities can improve urban environments through green infrastructure that combines recreation with stormwater management. The project, Vacant to Vibrant (V2V), is a portfolio of nine repurposed vacant lots in three cities in the Great Lakes region; the project team was led by staffers from the Cleveland Botanical Garden. This is an ambitious project, because recreation and stormwater management have generally not been considered compatible land uses at this scale, nor do they have shared constituencies or methodologies. The primary value of this study is that it exposes, in highly specific detail, the systemic barriers to improving both environmental sustainability (stormwater management) and quality of life for residents in troubled neighborhoods (aesthetic and recreational amenities). For me, this book also implicitly raised deep and disturbing concerns about the limits of green design in addressing social and economic inequalities.

The book is organized chronologically, following the project from the concept stage, to research fieldwork, to design and construction, to maintenance, to “lessons learned.” Chapter 1, “Green stormwater infrastructure on vacant lots,” provides historical context: it summarizes the trajectory of urban development and decline in Midwestern industrial cities, from population growth due to the Great Migration and European immigration, to redlining and block-busting, to de-industrialization, de-population, and shrinking municipal revenues and capacity to provide services. This is familiar history for those who teach or have studied American urban geography, but is nevertheless helpful in establishing the social and cultural contexts in which the Vacant to Vibrant project was situated. Particularly useful are the descriptions of three sets of stakeholders whose missions to revitalize these cities often work at cross-purposes: non-profit land banks, which aggregate vacant parcels for future use; the U.S. Environmental Protection Agency, which has threatened consent decrees to improve water quality in the Great Lakes (mainly by requiring cities to reduce combined sewer overflows, or CSOs); and residents, who (often justifiably) lack trust in government institutions.

Chapter 2, “City dynamics that shape vacant land use,” describes the process of selecting the three cities; the similarities and differences of their urban development history; and the characteristics of the neighborhoods that were chosen (West Side in Buffalo, Woodland

Hills in Cleveland, and Aetna in Gary). The criteria for selecting cities included those with an abundance of vacant lots; a sense that the project would be welcomed in the community; and a mix of geographical similarities and differences that would yield useful lessons about the design variables. The chapter describes the neighborhoods, including their demographics, cultural history, urban form, and physical geography, with a special focus on soil types (both native and modified by humans) and their implications for groundwater recharge. All three neighborhoods were connected to the steel industry, and all have similar demographic profiles.

Chapter 3, “Vacant to Vibrant Planning,” explains the parcel selection design and review processes. The project team used a multi-scalar approach (city, neighborhood, block group, and parcel) with a mix of quantitative and qualitative criteria at each scale. Parcels or neighborhoods that had other ongoing projects or investment were given higher priority to increase overall neighborhood impact. When the parcels had been selected, preliminary plans were drawn for each one before seeking community input. For stormwater management, the primary criterion was that the rain gardens should retain stormwater runoff on the parcel at a minimum, and should collect it from abutting parcels and the street where possible. For recreation, a typology was developed along a continuum dependent on neighborhood context, from passive recreation (sitting, birdwatching) to active recreation (a handball court, play equipment). A limited palette of mostly native plants was developed; and modest hardscaping included inexpensive materials and some salvaged materials.

The design team struggled with neighborhood outreach when the preliminary designs were presented. Poor or elderly residents often did not have internet access or email, so they could not receive notices about meetings. Survey response rates were very low. One-on-one meetings on residents’ stoops tended to get better input, as well as to build some trust. Where it was possible to meet with members of an existing community organization, the design team received more feedback, but Albro also notes the ethical problems that arise when leaders of such groups are, *de facto*, asked to support projects that they and their organizations have not been involved in conceiving of or designing.

The design team also struggled with buy-in. Residents were primarily concerned with making the vacant lots safe and preventing crime and vandalism, which pushed design revisions in some interesting directions. For example, connecting the vacant lots to each other or to other public space (a common principle in open space planning) was viewed by residents as a negative, as it would allow alleged perpetrators of crimes to escape capture. Residents wanted conventional play equipment geared towards younger children, to prevent teens from loitering. They also wanted familiar shrubs and flowers, rather than the less showy native plants promoted by the designers.

Perhaps surprisingly, then, as detailed in Chapter 4, “Vacant to Vibrant Implementation,” permitting and construction proceeded on time and on budget. The average construction cost per parcel was \$18,000, with sites ranging from 3,200 to 9,300 square feet. During construction, the designers consulted with landscape contractors to ensure that the projects would be low-maintenance in the future. Over the seven-month growing season, each group of three parcels was estimated to need six hours of maintenance per month, which is very low. Thus, it was difficult to find skilled contractors who would take such small jobs: Albro offers (in

Chapter 5, “Sustaining urban greening projects”) a variety of possible solutions to maintenance needs, including creating a teen or adult workforce training program; educating contractors and residents about native plants (they tended to be mistaken for weeds); and allowing the parcels’ amenities to change organically over time consistent with users’ needs and wants.

In Chapter 6, “Scaling up networks of small green infrastructure,” Albro evaluates the effectiveness of the nine designs with respect to stormwater reduction and recreation benefits. This is the weakest chapter, because it both conflates and incompletely discusses findings and analysis. For example, Albro states that the project retained 749,000 gallons of stormwater over a six-month period in 2015. However, there is little attempt to place this number in context, and no comparison with the control group of parcels. Second, Albro asserts that there has been little research on quantifying plant evapotranspiration and its role in stormwater management; a cursory database search shows that this is simply untrue. Last, there is only indirect, anecdotal discussion of how the projects affected residents’ quality of life and no discussion at all of the projects’ effect on stabilizing or increasing real estate values in the neighborhoods.

Where the book is much stronger, by contrast, is in identifying structural barriers to integrating recreation and stormwater management. Chief among these is the patchwork of missions, regulatory priorities, and investment between stakeholders, including non-profit land banks, city planning agencies, sewer districts, and state and federal agencies. Each of these types of agencies values green infrastructure differently, and there is little coordination between them. Likewise, municipal zoning regulations often work against green infrastructure: for example, Albro recommends that municipalities remove prohibitions against downspout connections and other barriers to green infrastructure.

Albro also recommends the adoption of cutting-edge regulatory and collaborative strategies to boost green infrastructure. She describes stormwater fees and stormwater credits as means to incentivize landowners to create green infrastructure. She suggests that health organizations (hospitals and insurers) should be brought into the conversation to help raise awareness of the health and wellness benefits of green infrastructure. She suggests more extensive neighborhood education to make residents aware of the benefits of using native plants and decrease the stigma of “low maintenance” landscaping. Finally, she argues for increased neighborhood density -- not through infill development, as is currently popular in urban planning circles -- but by increasing density of existing built parcels while maintaining vacant lots permanently as green infrastructure.

This book, because it is so very city-specific, has limited use in the geography or environmental studies university classroom as a textbook. However, it is an excellent resource for undergraduate students working on community service projects, with much practical information about working with diverse constituencies and adjusting designs to meet their needs. The book could have been published simply as a research article in an academic journal or as a planning report on an institutional website, but I am very glad that the author chose the extra work of publishing it as a book.

The book contains black-and-white photographs with a “before and after” view of each of the nine sites. They are small and not high-quality, but they can be viewed in combination with a set of very readable, attractive design plans in the Appendix, in order to reach a fuller

understanding of how the sites look and function. (There are no people in any of the photos, which seems like a missed opportunity.) The bibliography, although compact, lists useful references to research studies on the economic, health, and community benefits of green infrastructure.

One final note: this study makes disturbingly clear how low the bar is set for high quality public open space, especially in poor or minority neighborhoods. As a landscape designer, I have experience preparing plans for heavily used sites. Never have I encountered the kinds of setbacks mentioned here: the theft of desirable shrubs (which was one of the arguments for using less well-known native species); the perception that trees would provide hiding places for criminals and thus must not be used; the constant repair of swing-sets after casual destruction; and the vandalism of bird houses, lighting, and soil moisture monitoring equipment, to showcase only a few. Is the solution more education on the benefits of green infrastructure? It seems necessary – but completely insufficient.