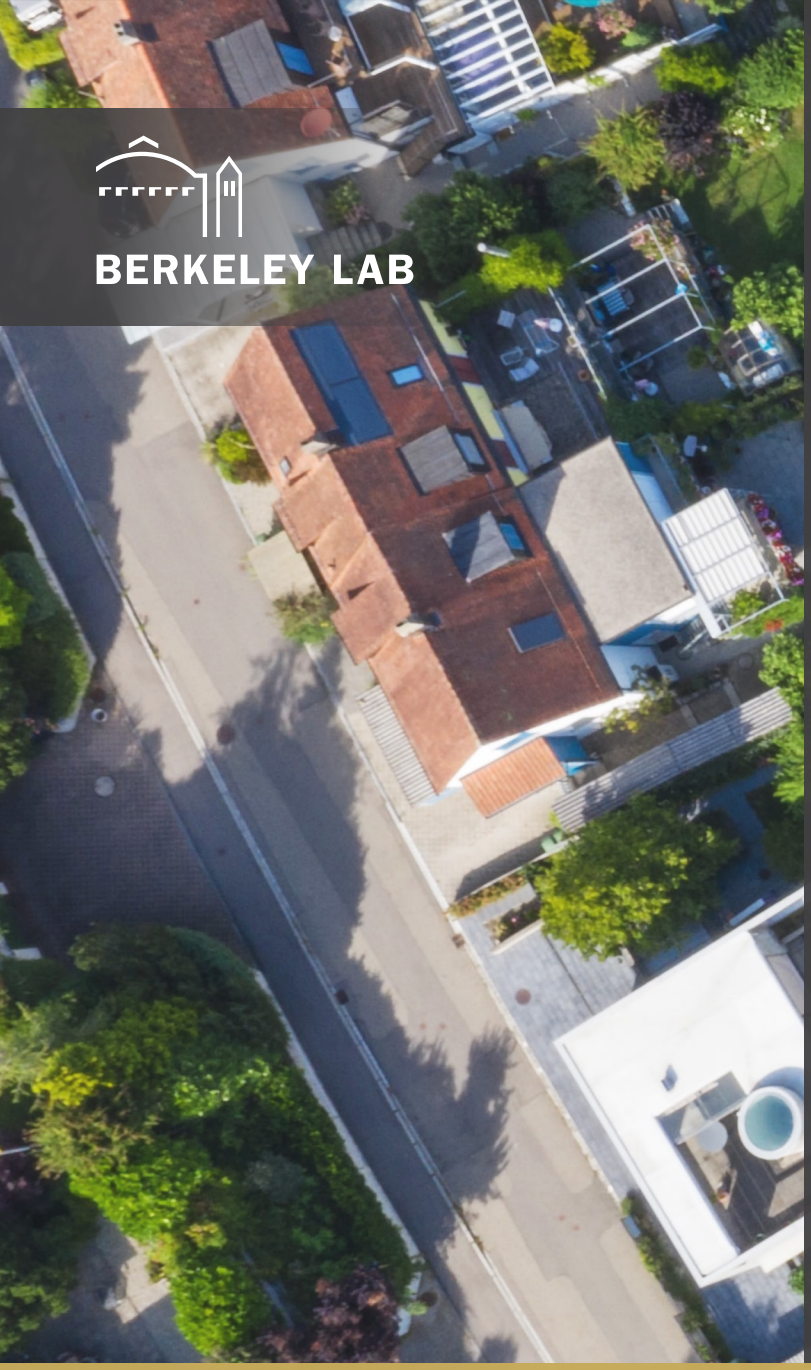


BERKELEY LAB

CARBON NEUTRALITY, BLOCK BY BLOCK

Buildings consume about half the energy used in the U.S. Reaching net zero emissions for all buildings is critical, but single-family home retrofits are expensive and out of reach for low-income families, while new construction creates significant new emissions — typically two to four times more than renovations — which harm the health of people and the communities they live in.

THE PROJECT

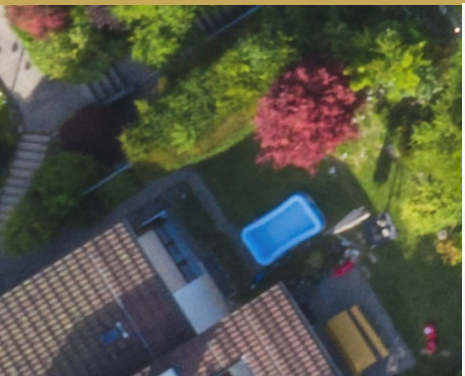
Researchers at Lawrence Berkeley National Laboratory partnered with UC Berkeley to design the Oakland EcoBlock, a neighborhood retrofit integrating technical, legal, financial, and community solutions to decarbonize existing urban communities, block by block. The EcoBlock features a solar-powered microgrid, home retrofits that save energy and water, and shared electric vehicles. The EcoBlock slashes greenhouse gas emissions, boosts community resilience, and prioritizes equitable access and community buy-in. Lessons learned at the block level can guide decarbonization efforts as they scale up to advance state and national climate and energy goals.

BROADER ACCESS
to clean energy & transportation

LOWER
water & energy bills

REDUCED
carbon emissions

MORE
reliable electricity



+ WE PARTNERED WITH +

City of Oakland

FUNDING PROVIDED BY THE CALIFORNIA ENERGY COMMISSION

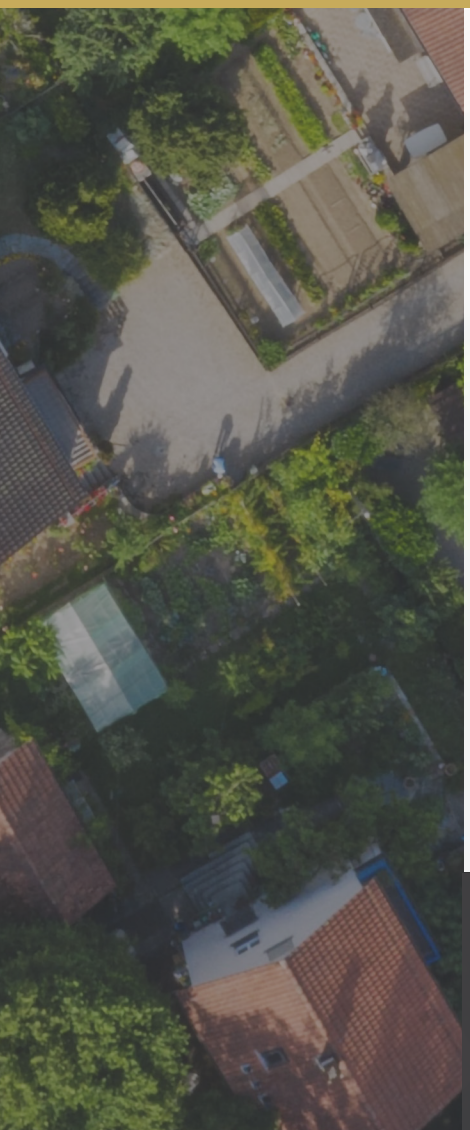
Berkeley UNIVERSITY OF CALIFORNIA

BACKGROUND

As a National Laboratory funded by the U.S. Department of Energy, Berkeley Lab is committed to a just and equitable energy transition. We strive to ensure that the impacts of our research benefit all communities, as well as future generations. To meet these goals, we partner with community-based organizations, public, and private agencies to help make clean energy technologies and resources accessible to all.

In this project, Berkeley Lab designed a model for slashing emissions and making clean energy and transportation affordable, accessible, and reliable — one city block at a time.

Visit Berkeley Lab's EcoBlock Website ▸



RICH BROWN
DEPUTY,
Building Technology Department

ABOUT THE PRINCIPAL INVESTIGATOR

Rich Brown is a Research Scientist with over 30 years' experience conducting research on energy use in buildings at Berkeley Lab's Building Technologies and Urban Systems Division. His research addresses the development and demonstration of technologies to reduce building energy use, make building loads more grid-interactive, and intelligently manage distributed energy resources, particularly through networked systems of sensors and controls. He also leads LBNL's research on DC power distribution in buildings.

Richard E. Brown et al., "Accelerating the Deployment of Advanced Energy Communities: The Oakland EcoBlock A Zero Net Energy, Low Water Use Retrofit Neighborhood Demonstration Project." (2019).

Kilvans, Laura. Electric Avenue: One Oakland Block's Improbable Journey to Ditch Gas. KQED (2023).

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