

**Hot Street Futures:
Designing Climate-Responsive Corridors in New York**

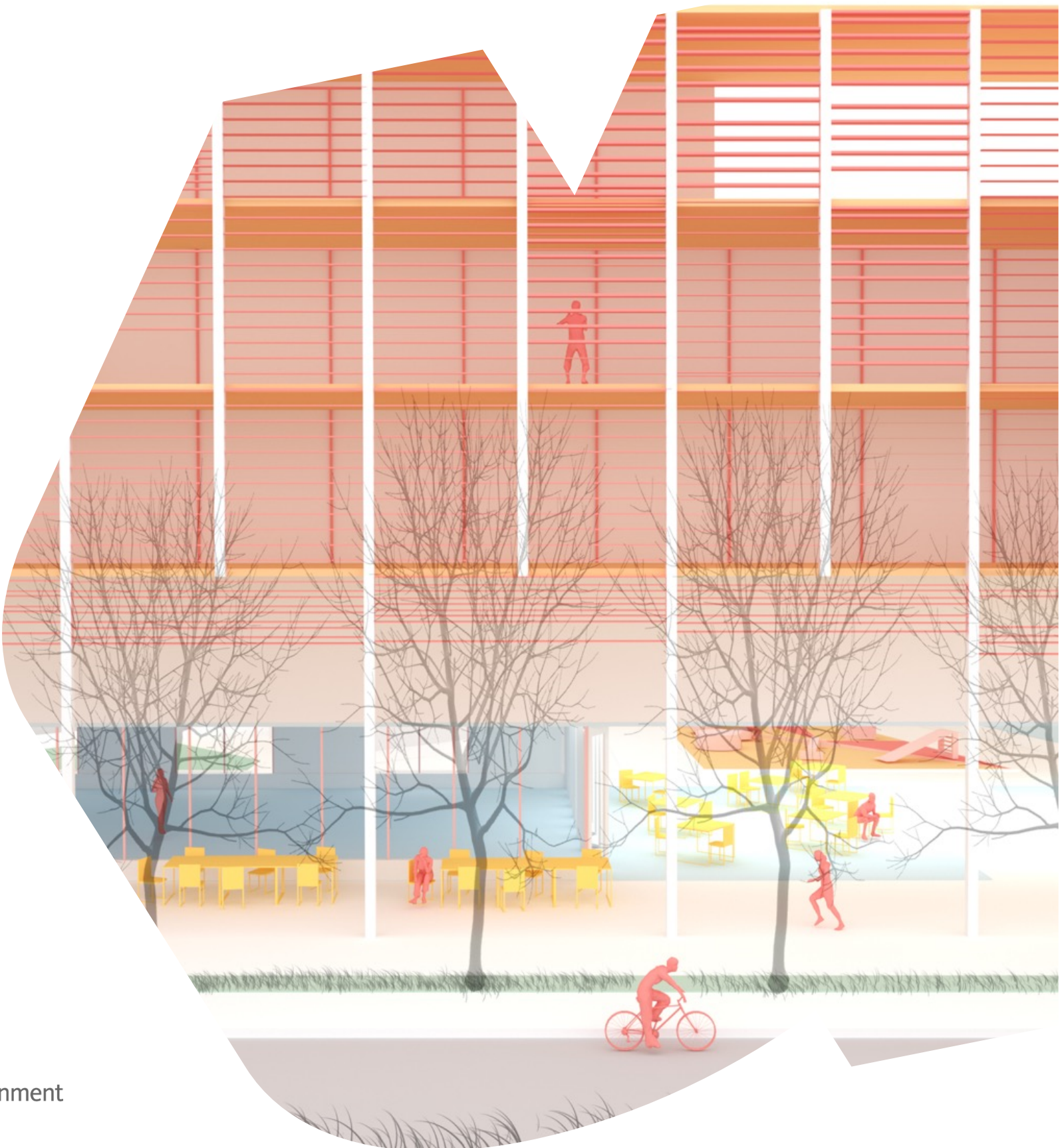
**Kristine Stiphany, PhD, AIA
Jorge Ituarte Arreola / SOM - Los Angeles**


Collaboration:

 **University at Buffalo**
Design for Resilient
Environments Lab
School of Architecture and Planning

 **University at Buffalo**
Rudy Bruner Center
for Urban Excellence
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Building and Environment
Visualization Lab
School of Architecture and Planning



An aerial photograph of a city street, heavily tinted with a red color. The street is lined with buildings on both sides. On the left side of the street, there is a large parking lot filled with many cars and several white vans. A long line of tents and makeshift shelters is set up along the sidewalk on the left. On the right side of the street, there are more tents and shelters, some of which are made of cardboard boxes and other debris. A person is riding a bicycle down the center of the street. In the foreground, three people are walking away from the camera. The overall scene depicts a homeless encampment in an urban environment.

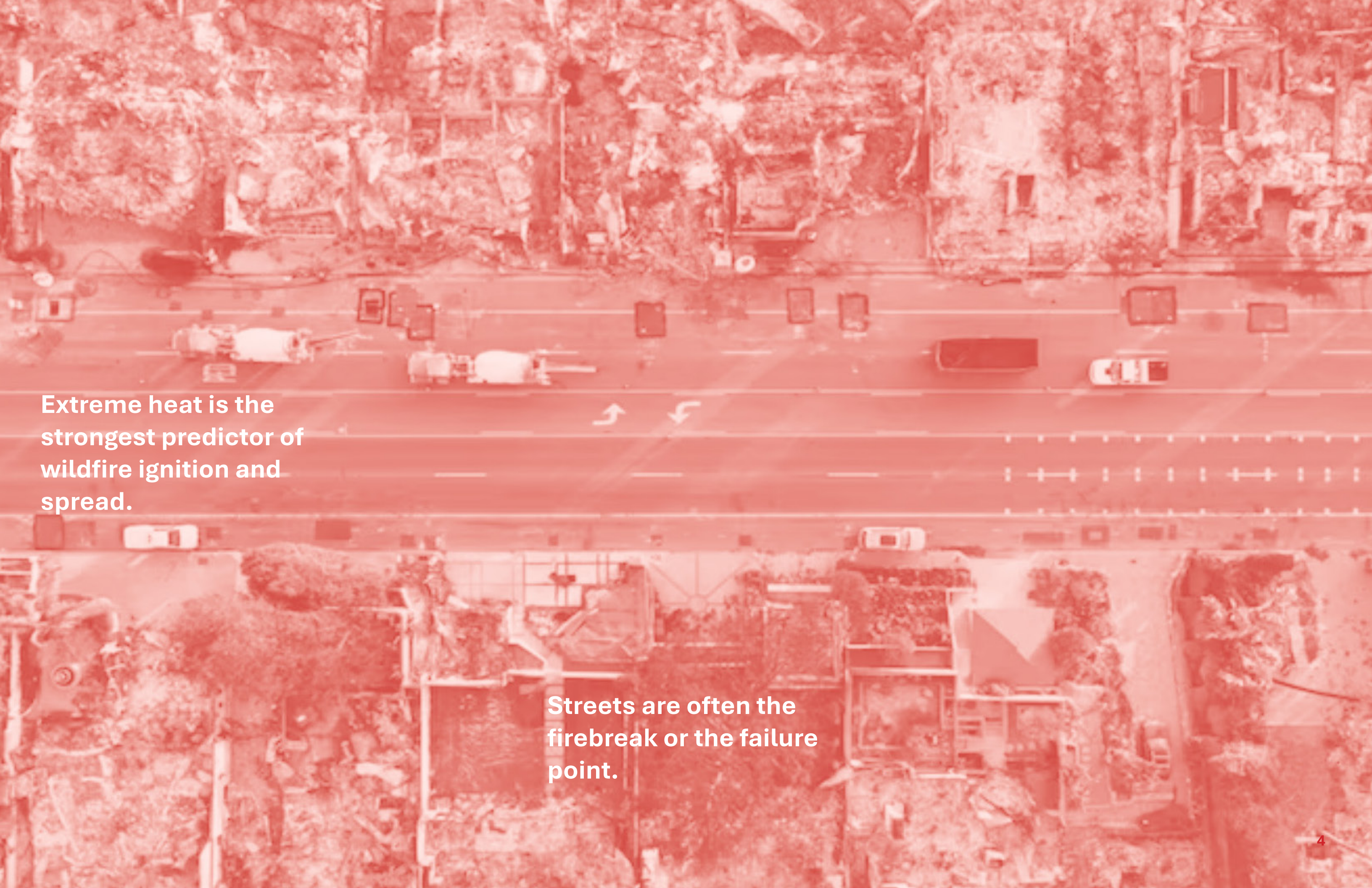
**Extreme heat deaths in
the U.S. have increased
117% since 1999 (JAMA).**

**People experiencing
homelessness
are up to 200% more
likely to die during
extreme heat.**

SAKURA NOODLE INC

Heat kills more
Americans annually
than hurricanes, floods,
and wildfires combined.

Hydration + shade
can eliminate 80% of
heat-related deaths.

An aerial photograph of a city street, overlaid with a semi-transparent red filter. The street is a multi-lane highway with white lane markings. Several vehicles are visible, including a large white semi-truck, a white tanker truck, and several smaller cars. The surrounding area is densely populated with trees and buildings. The text "Extreme heat is the strongest predictor of wildfire ignition and spread." is written in white, bold, sans-serif font on the left side of the image.

**Extreme heat is the
strongest predictor of
wildfire ignition and
spread.**

**Streets are often the
firebreak or the failure
point.**



Infrastructure failure
multiplies heat-related
mortality by 3–5x.

90% of US
infrastructure is
old and outmoded.

A photograph of a woman and a young girl standing on a city sidewalk. The woman, with curly hair and wearing a patterned shirt, is holding the girl. The girl, also with curly hair and wearing a floral dress, is holding a large jar. They are both looking towards a large industrial fan on the right. The fan has a sign that reads "VENTILATION" and lists various services. The background shows a city street with a building that has a sign for "De Home & Car Audio Equipment". The entire image is overlaid with a red tint.

**40 million Americans
lack access to home
cooling.**

**Kids' ER visits spike
on days > 95°F.**



**Extreme heat and
flooding co-occur in the
same neighborhoods
74% of the time.**

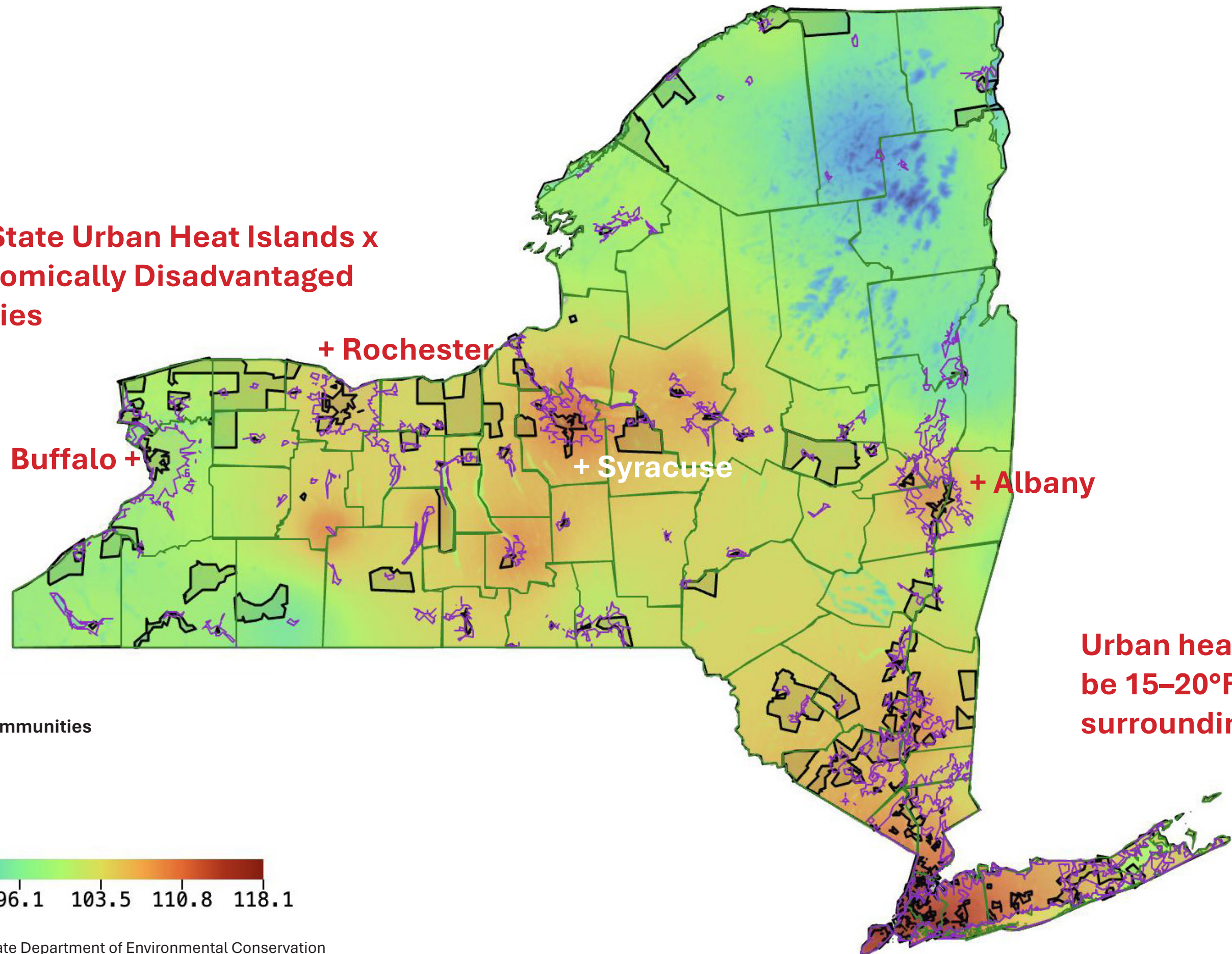
**Infrastructure
inequities predict
climate risk more than
geography.**

Asphalt can reach 160°F during heatwaves—hot enough to cause second-degree burns in seconds.

Tree canopy can lower surface temps by 20–45°F

HOW HOT IS NEW YORK?

**New York State Urban Heat Islands x
Socioeconomically Disadvantaged
Communities**

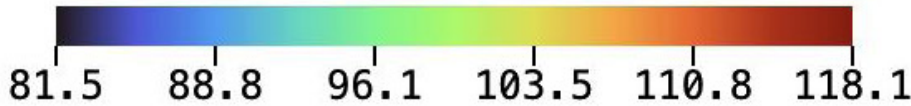


**Urban heat islands can
be 15–20°F hotter than
surrounding areas.**

Disadvantaged Communities

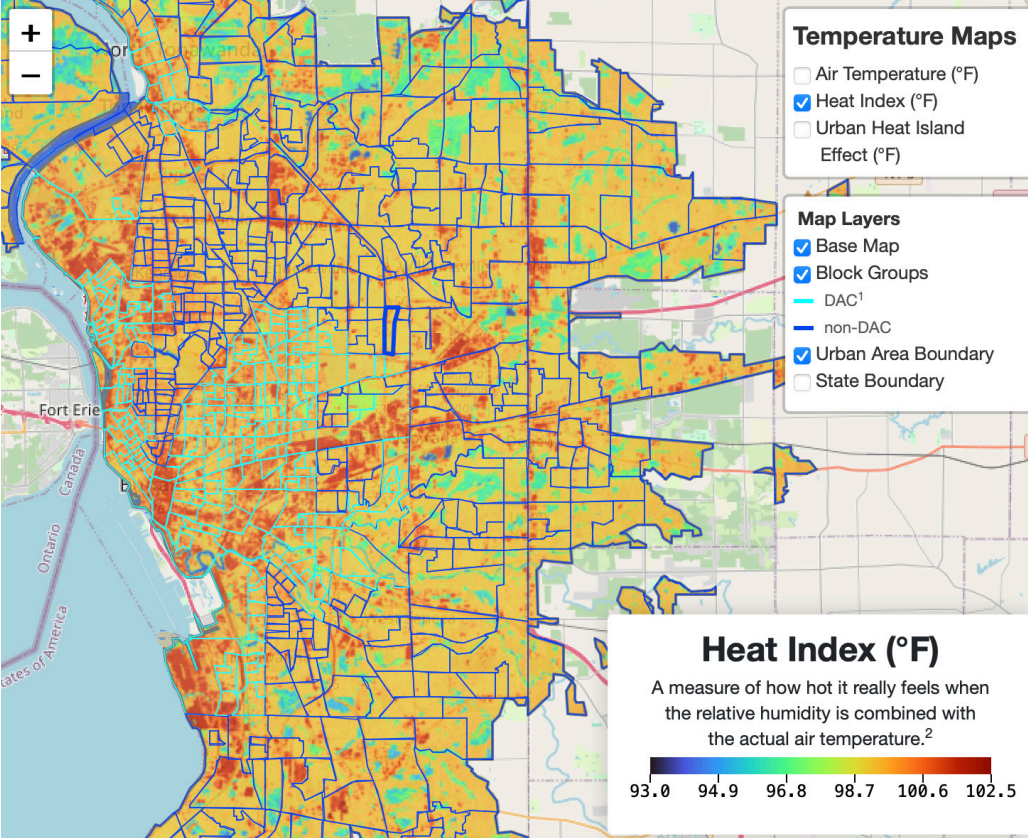


Heat Index

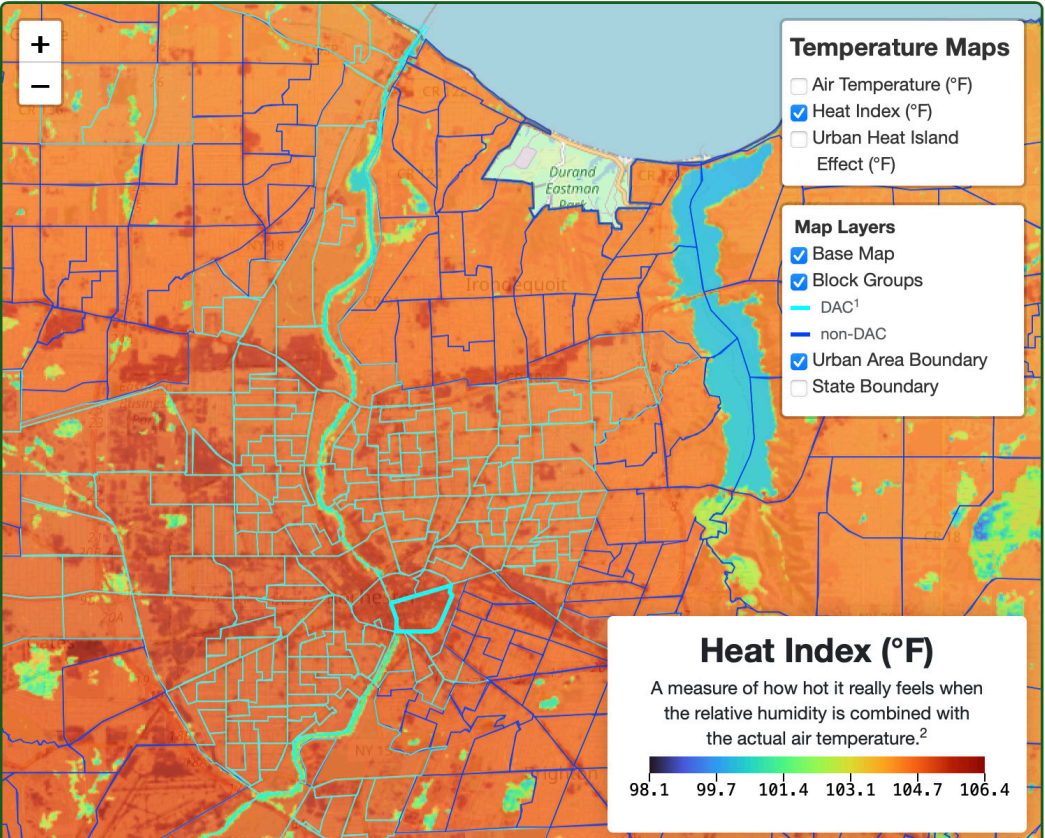


Data: The New York State Department of Environmental Conservation (DEC), in partnership with SUNY College of Environmental Science and Forestry (SUNY ESF) and Davey Institute

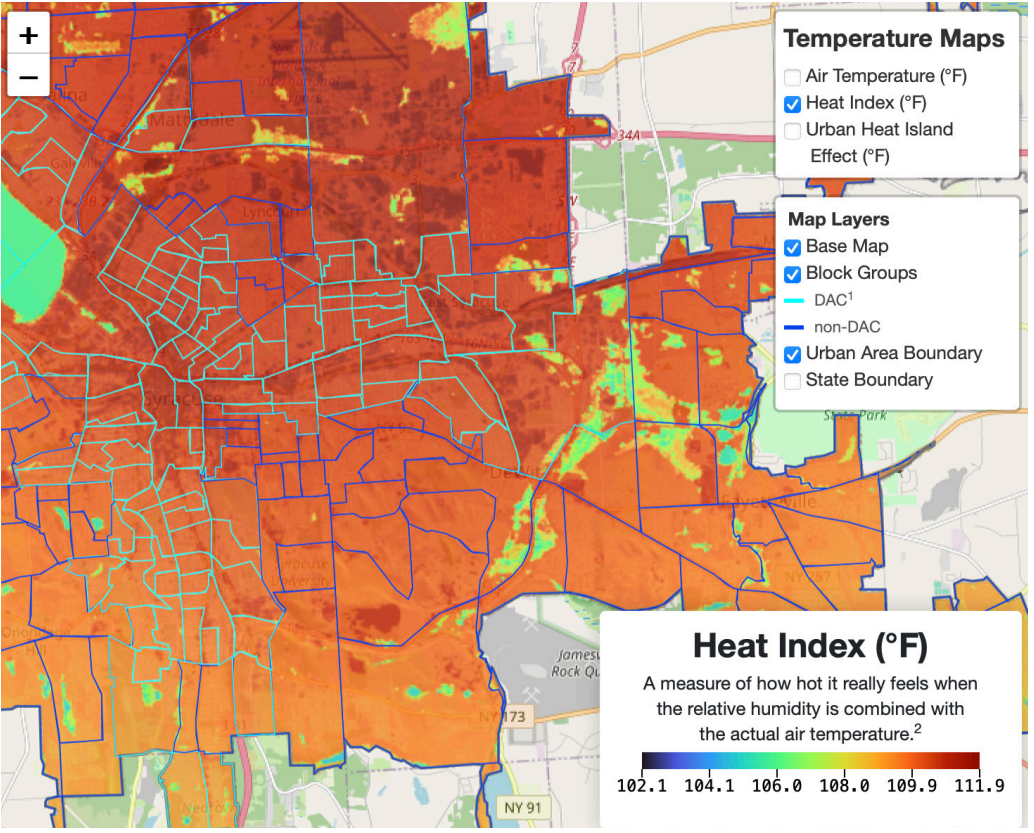
Hot Corridors



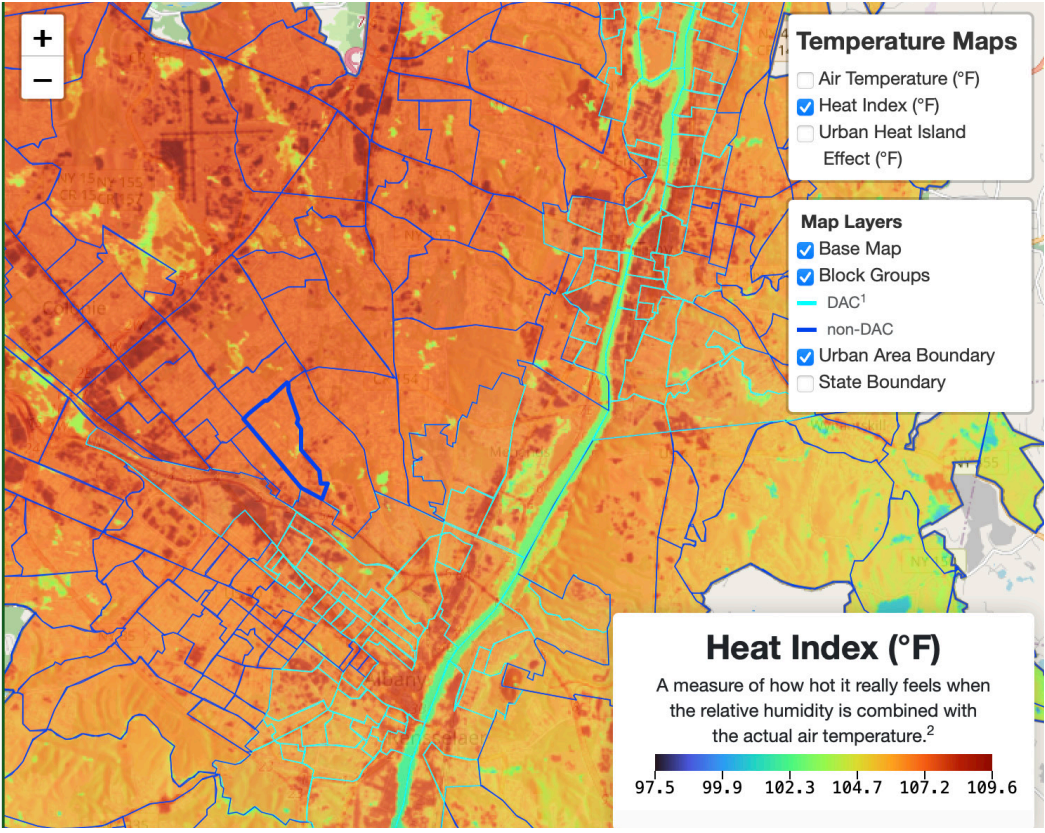
Buffalo



Rochester



Syracuse



Albany

An aerial photograph of a modern park design. In the foreground, a large, rectangular wooden deck with a metal railing is elevated above a dense forest. Several people are on the deck, some standing and others sitting. To the left of the deck, a winding path leads through the trees. In the background, a river flows through the landscape, with a bridge visible in the distance. The entire image is overlaid with a semi-transparent red filter.

THREE DESIGN GOALS: Thermal Justice, Climate Performance, Public Life

Microclimate Design

Develop spatial and material strategies—shade geometries, airflow corridors, ground surfaces, and planting systems—that reduce radiant and ambient heat while enhancing thermal comfort along the street.

Corridor Typologies

Identify, document, and reimagine New York State’s recurring street types—main streets, residential corridors, suburban arterials, village centers, and industrial edges—through their spatial logic, thermal behavior, and climate vulnerabilities.

Streets as Public Places

Reframe streets as civic environments where shade, vegetation, materials, and built form work together to support daily movement, social life, and public health in a hotter New York.

Cascading Design Scales

...FROM TERRITORY

1. Global Cases in Corridor Landscapes

2. Heat Mapping for New York State with the UB SA/P Building Environmental Visualization Lab (BEVL)

3. Thermal Transects and Middle Landscape Analysis

4. Street Archetype Identification and Typological Framework

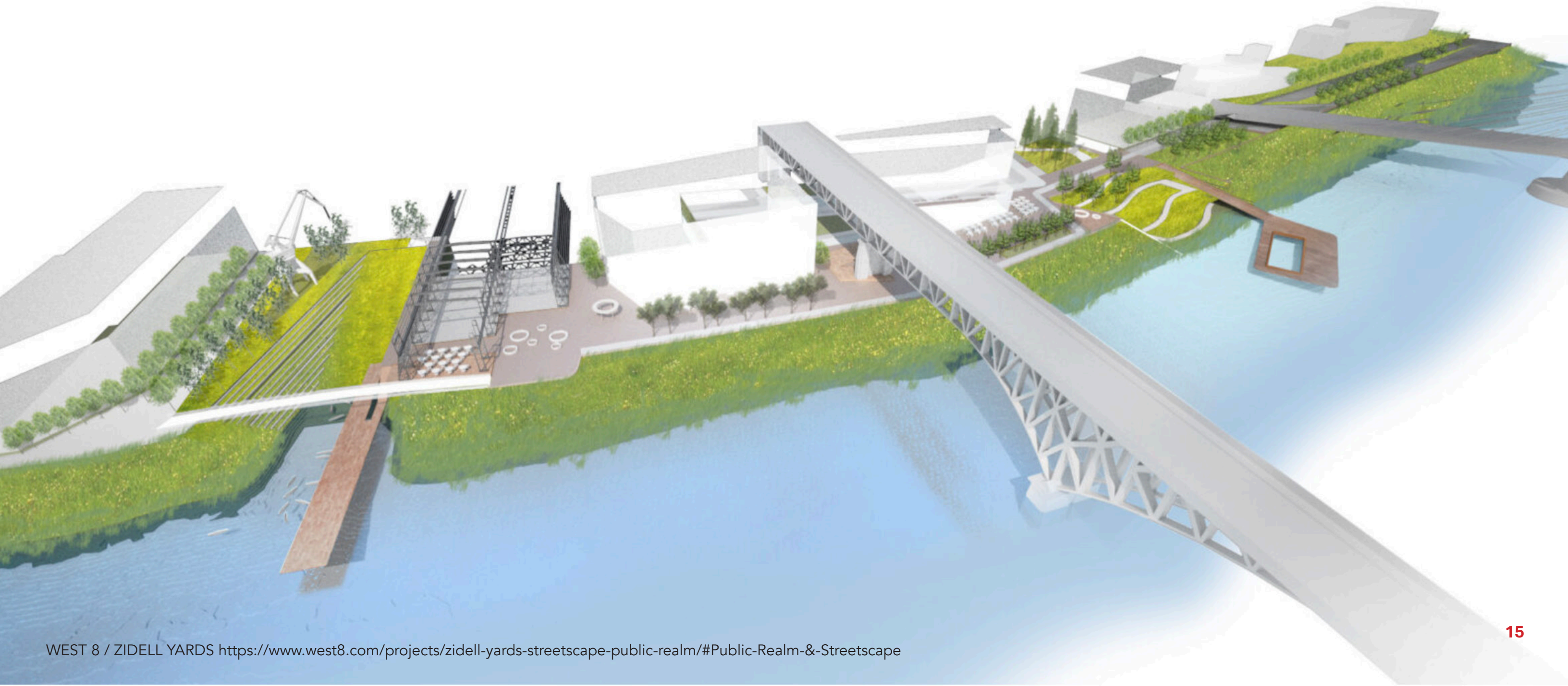
5. Spatial Prototypes and Modular Cooling Assemblies

6. Visualizing Microclimate Performance

... TO HUMAN EXPERIENCE

Defining Middle Landscapes

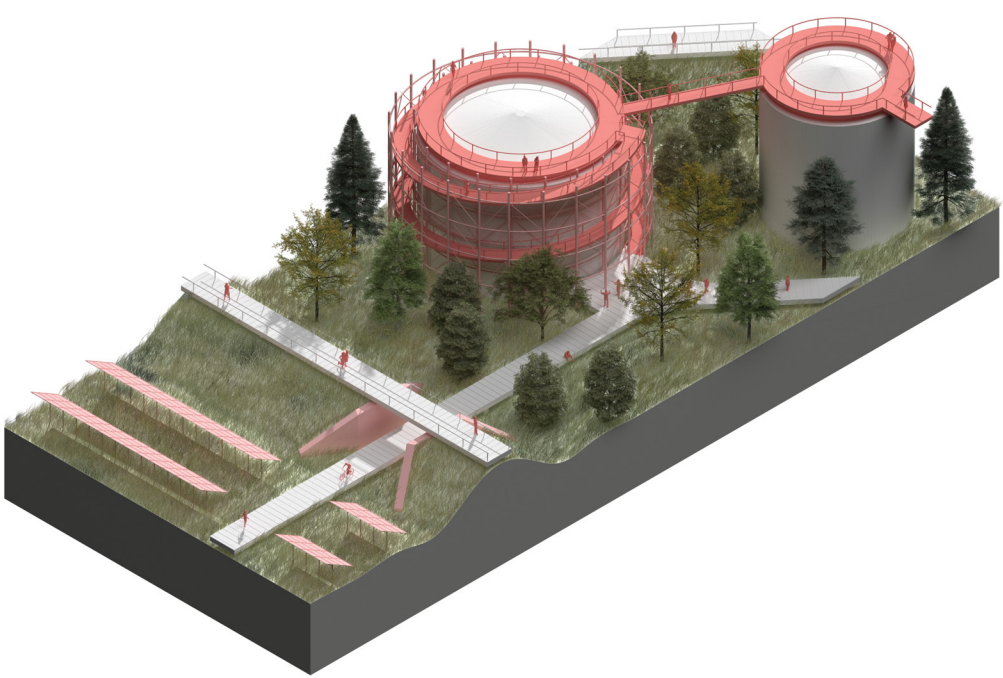
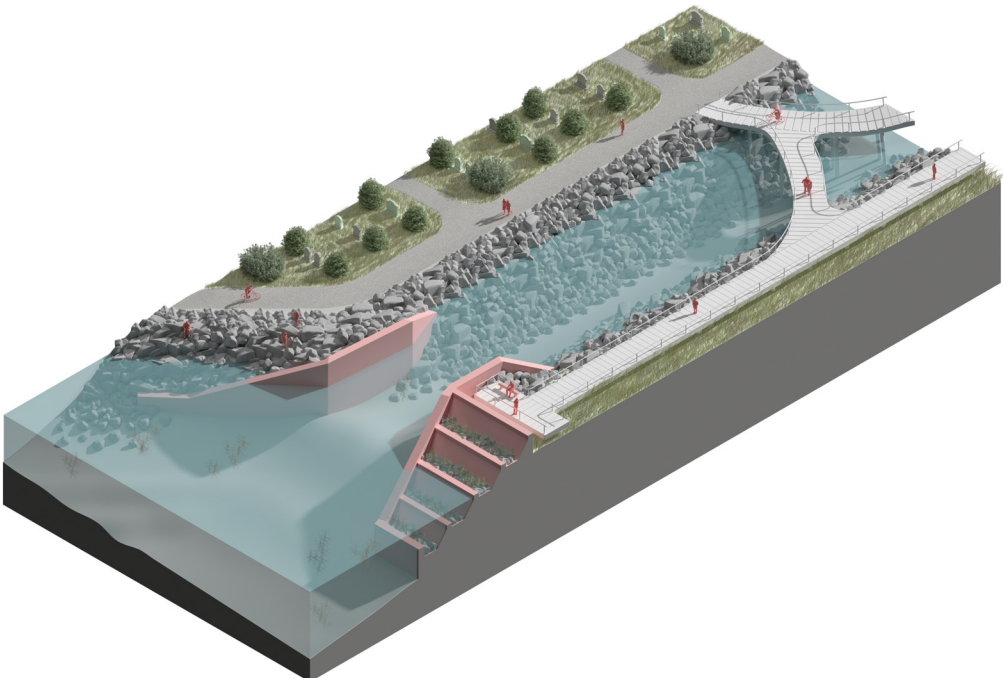
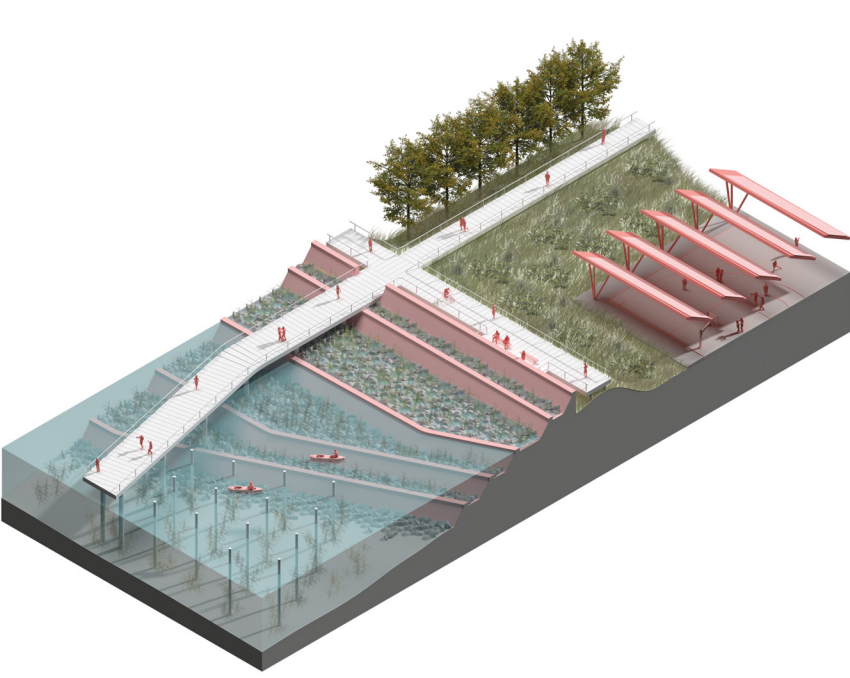
Middle landscapes are the designed spaces between buildings and systems—where the street becomes a climate environment, a public realm, and a site for intervention.



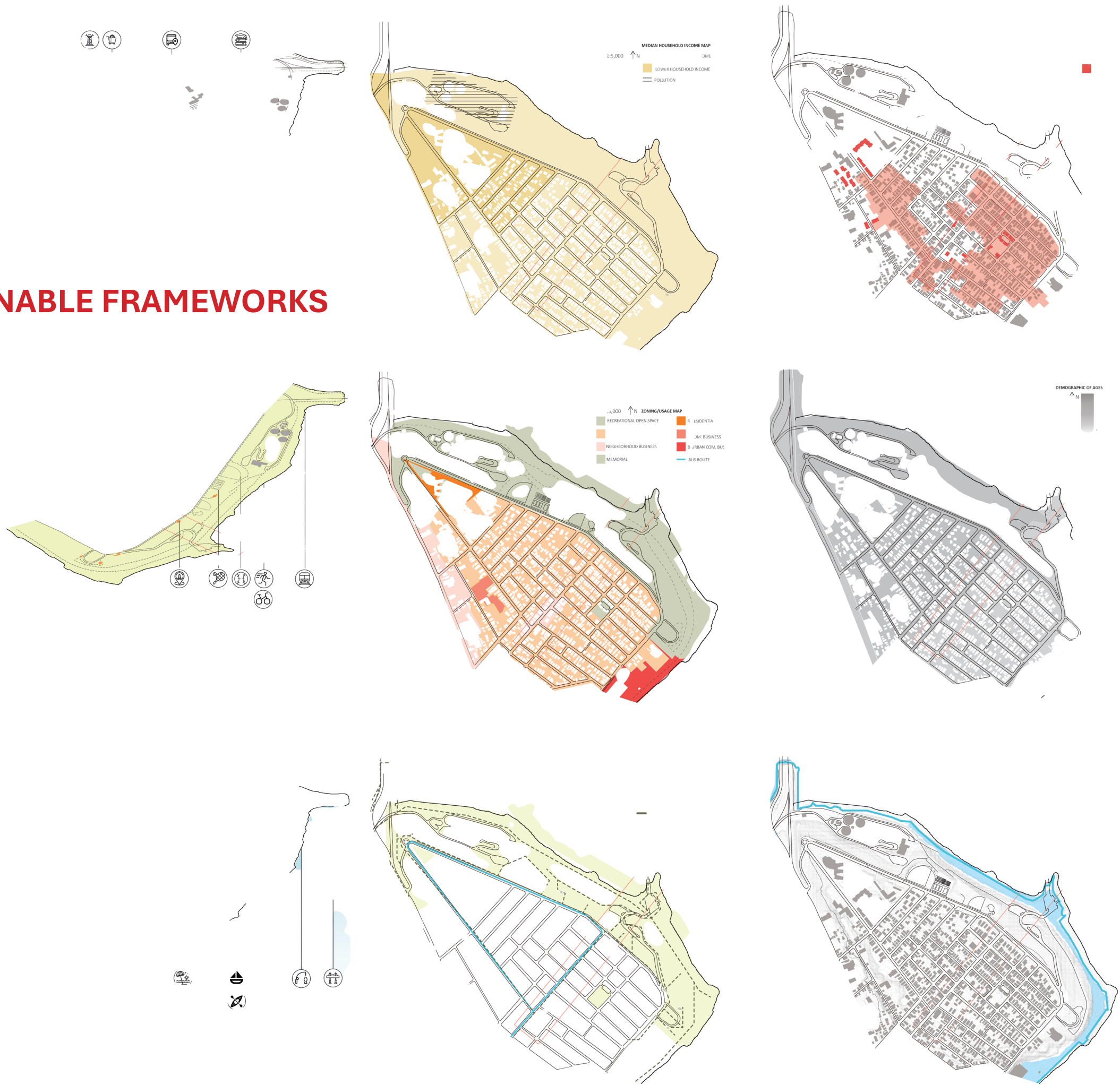
A photograph of a residential street in winter. The ground is covered in a thick layer of snow. On both sides of the street, there are mature trees with bare branches, some of which are heavily laden with snow. Several cars are parked along the street, partially covered in snow. The overall scene is quiet and serene, typical of a suburban neighborhood in winter.

PARKWAYS AND RADIALS

TRANSECTS, SITES, TYPES



VISUALIZING CRITICAL - ACTIONABLE FRAMEWORKS







DESIGNING MORE SHADE, LESS SURFACE

CLIMATE-READY CORRIDORS CHALLENGE — applied collaboration + ongoing engagement



SPONSORING AGENCY New York State Department of Environmental Conservation (NYSDEC)
UB TEAM



Kristine Stiphany



Jorge Ituarte - Arreola



Lauren Fischer



Mohamed Aly Etman

KEY TRAVEL DATES

Sponsored student travel

February 9 - 13 (tbd)	Fieldwork
March 10 - 12	Midterm Reviews - NYSDEC / Albany

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