Cool
Conscious
Cities

Cool-Kit

Landscape-Based Solutions to Combat Extreme Heat + Advance Cool Equity

ATLAS LAB

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A PROJECT OF the lab

Cool-Kit

Landscape-Based Solutions to Combat Extreme Heat + Advance Cool Equity

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INTRODUCTION

Created by landscape architects, the Cool-Kit presents scaled solutions to mitigate and adapt to extreme heat to increase cool equity within the built environment.

Cities across the nation are experiencing increased temperatures for longer durations, and communities with a lack of tree canopy coverage are enduring extreme health impacts and financial burdens. According to the Tree Equity Score, the poorest communities have 41% less tree cover than the wealthier ones. Further, the Nature Communications report found that people of color and those living in poverty experience hotter temperatures in 97% of U.S. cities compared to white people and the wealthy. Whether a large metropolis or a small town, disparities in tree coverage exist, yet little has been done to promote change in policies to increase tree canopy coverage within existing neighborhoods.

Atlas Lab launched **Cool Conscious Cities,** an initiative that investigates the causes and impacts of heat disparity within disadvantaged communities. Over the course of a year, Atlas Lab conducted research, aggregated data, and interviewed city leaders and community advocates to determine the most pressing needs for heat mitigation and adaptation solutions in the built environment.

The New York Times described San Antonio's low income communities as "islands of heat" due to their lack of tree canopy coverage.[1] As of July 31, 2022 San Antonio recorded 51 days at 100° or above, breaking heatwave records.[2] Across the country, ever increasing heatwaves, for longer durations, are becoming the norm. As a result, ecological disparities are becoming apparent within disadvantaged communities. Lack of resources, limited incomes, physical and mental health concerns, coupled with high asphalt to planting ratios have threatened the livelihoods of people of color and low-income communities.

1 Spivey, Sarah. "San Antonio just experienced the hottest July on record: July 2022 also ends as the second hottest month ever recorded" 1 Aug. 2022

2 Sandoval, Edgar. "In San Antonio, the Poor Live on Their Own Islands of Heat." New York Times, 22 July 2022

Revealed in 2021, the "Tree Equity Score" (TES) was made available as an online resource database to elucidate tree inequity in America. The TES is an interactive online platform that assigns a score based on how tree canopy and surface temperature align with income, employment, race, age and health factors. The scores indicate whether there are enough trees in specific neighborhoods or municipalities for everyone to experience the health, economic and climate benefits that trees provide Thanks to this research, the dialogue surrounding tree equity has been initiated, prompting national agencies like the National Oceanic and Atmospheric Administration to research and develop methods to combat heat.

2022 shows an estimated 1,708 heat-related deaths that year across the U.S. This is a rise of about 245%, vastly exceeding the increase in census-recorded population from 2000 to 2020 of about 18% (Newsweek / CDC)

Data from Tree Equity Scores and NASA/U.S. Geological Survey, Census Bureau

OAKLAND CALIFORNIA

SURFACE TEMPERATURE

Cooler — Hotter

HOUSEHOLD INCOME

Min $20K — Med $58K — Max $208K

TREE EQUITY SCORE

> 70 — 100

MINNEAPOLIS MINNESOTA

SURFACE TEMPERATURE

Cooler — Hotter

HOUSEHOLD INCOME

Min $17K — Med $55K — Max $136K

TREE EQUITY SCORE

> 70 — 100

Extreme heat has significant and multifaceted impacts on human, environmental, and economic health. For humans, prolonged exposure to high temperatures can lead to heat-related illnesses, such as heatstroke and dehydration, and exacerbate preexisting conditions, particularly in vulnerable populations like the elderly and children. Environmentally, extreme heat stresses ecosystems, leading to biodiversity loss, increased wildfires, and diminished water resources. Economically, the effects are substantial, with increased healthcare costs, reduced labor productivity, and damage to infrastructure.

These combined impacts underscore the urgent need for effective heat mitigation and adaptation strategies to protect public health, preserve ecosystems, and sustain economic stability.

People who work or live outside, the elderly, and those who are socially isolated are at the highest risk. (HEAT.GOV)

Surface temperatures captured by FLIR Thermal camera.
Photos by Carlos Barria (Rueters)

Education, trust and access to resources proved to be some of the largest qualitative barriers for communities receiving heat interventions, compounded by legacies of racism in urban landscapes. In order to build a sustainably cooler and more equitable city, short-term and long-term solutions must contend with the deep causes of heat inequity - from the technical application of urban planning strategies to the social and economic barriers harming the communities who need these solutions most.

As the climate impact severity increases, local governments and municipalities are facing new and urgent demands to address water conservation efforts, drought impacts, tree abandonment issues exacerbated by poor planning practices.

The rich have, on average, about 15% more tree cover and live in neighborhoods that are around 3°F cooler than the poor. (Robert McDonald, PLOS ONE)

Street snapshots during high temperature summers in Sacramento. Photos by Kimberly Garza.

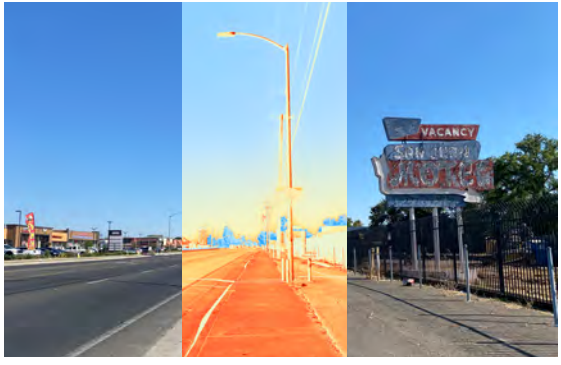
Extreme heat disproportionately impacts disadvantaged communities due to a combination of factors, including limited access to green spaces, higher levels of impervious surfaces like asphalt, and inadequate housing conditions that lack proper insulation and cooling. These communities often face socioeconomic barriers that restrict their ability to afford air conditioning and other heat-mitigating resources.

Additionally, systemic issues such as historical redlining and zoning practices have led to the concentration of vulnerable populations in areas more susceptible to heat stress. These factors collectively exacerbate the health and environmental challenges faced by disadvantaged communities during extreme heat events.

Causes of Heat Inequity, Cool Conscious Cities

Cities can be 5-10° F hotter than surrounding areas because urban built environment materials absorb and re-emit heat. (NASA)

RIGHT - Street snapshots in Sacramento, CA (Cool Conscious Cities). Photos by Kimberly Garza.



Overhead utilities limit the height of trees allowed nearby.

Signs and billboards - and fears about trees blocking views of advertisements - often take precedence over trees.

Isolated trees and narrow sidewalks provide little shade during the hottest part of the day.

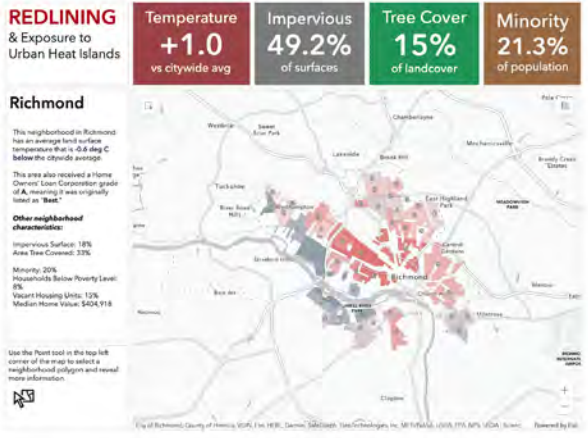
Tree removal is a common decision for home-owners facing fears about

Completely paved lots like this can relieve landscaping and utility expenses, but can reach extreme temperatures exposed to sunlight.

Trees like palms hold positive associations with beach-front luxury and are thought to be low-maintenance, but provide little shade or cooling effects.

With climate change disproportionately impacting low income and communities of color more severely, it begs a call to action—a call to action to citizens, policymakers, designers, planners, architects and landscape architects to evoke immediate change to improve ecological and social justice.

Informed by holistic equity perspectives, the **Cool-Kit** is designed to equip landscape architects, city leaders, policymakers, planners, and allied design professionals with implementable heat mitigation and adaptation strategies. Solutions are curated in alignment with proposed global climate adaptation plans and urban forestry policies.



Still from "Redlining and Exposure to Heat Islands" Science Museum of Virginia and Esri (2023)

A cooler future starts with landscape architecture.

Cool-Kit

SOLUTIONS

Goals

Urban heat inequity is a result of compounding effects from climate change, urban heat island, and environmental injustice which results in some communities feeling the burden of heat more than others. This Cool-Kit does not address strategies to mitigate climate change which have been studied elsewhere. It instead focuses on mitigating urban heat island and adapting to extreme heat in cities to build cool equity.

Resource + Tool: Tree Equity Score can be used to identify priority areas for mitigation and adaptation.

MITIGATE

Reduce extreme heat in cities through cooling strategies

ADAPT

Increase equitable access to cool places within cities to minimize the impact of extreme heat

Scales

Durable solutions to heat inequity will require interventions at a variety of scales, from front yard tree planting to city, county, or regional-scale green space planning. In general, the larger the scale of the intervention, the greater its cooling impact and area of influence. The cumulative effect of many small-scale interventions can significantly average urban temperatures.

This scale framework is based on the spatial categories defined in **Landscape Architecture Solutions to Extreme Heat (ASLA).**

Small (S) / Site

Solutions that can be applied to individual parcels such as a residential yard or commercial property

Medium (M) / Neighborhood

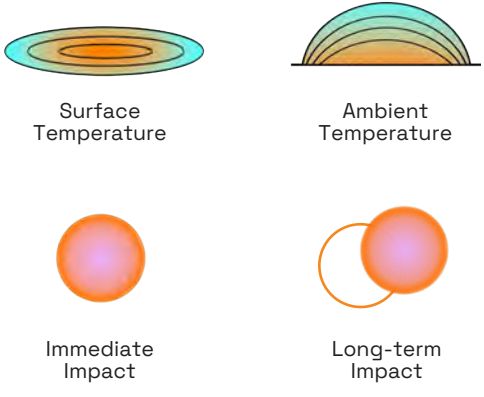
Built-environment solutions that affect a larger area, from a street to a district, typically in the public realm

Large (L) / City

Policy or planning-oriented initiatives that operate at the city, county, or regional scale

Cooling Impact

The **cooling impact** of a given solution is the amount that it reduces temperatures (degrees C or F), whether it affects surface or ambient temperatures, and its area of influence. Some solutions provide immediate impact, while others have increasing impact over time (for example, as trees grow to maturity). Studies that quantify the temperature reduction for various strategies can be found in **Landscape Architecture Solutions to Extreme Heat**, and in case studies in **Scorched: Extreme Heat and Real Estate.**



Note: In this framework, city-scale solutions have not been identified with a Cooling Impact.

Cool-Kit

Sites

Urban Greening
Healthy Urban Trees
De-paving
Shade Structures
Green Roofs

Cool Roofs
Misting Systems
Vertical Greening
Cool Surfaces
High-Albedo Coatings

MITIGATE

Urban Greening

Increase the total area of tree coverage and other vegetation, and decrease the amount of paved surface area.

HOW IT WORKS
Trees and other vegetation cool by shading the ground, and reduce ambient temperatures through evapotranspiration.

COOLING IMPACT

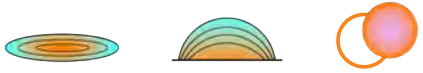
REFERENCE
Landscape Architecture Solutions to Extreme Heat (ASLA)

MITIGATE

Best Practices for Healthy Urban Trees

Good site preparation, planting, and irrigation practices allow trees to grow more quickly and live longer. This includes maximizing soil volume, minimizing compaction, amending soil, selecting the right tree for the site, irrigation for establishment especially during drought.

COOLING IMPACT



HOW IT WORKS

Larger trees have a bigger impact per tree as they shade a larger area, and have more leaf surface area which contributes to cooling through evapotranspiration.

REFERENCE

Cambridge Urban Forest Technical Report
Tree Planting from Vibrant Cities Lab

MITIGATE

De-Paving

De-paving is the process of removing existing concrete, asphalt, gravel or other hardscape areas and replacing with vegetation.

COOLING IMPACT

HOW IT WORKS

Paved surfaces are heated by the sun, and can store and radiate large amounts of heat, increasing the ambient temperature. Reducing the amount of pavement can reduce the amount of heat stored in the landscape.

REFERENCE

Green Venture Community Greening, Ontario, Canada

De-pave your Garden, London, UK

ADAPT

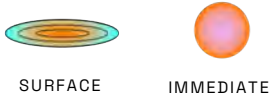
Shade Structures

Structures like pergolas, bus shelters, canopies, shade sails, awnings, and trellises create shade, providing a place for people to gather that is sheltered from direct sun.

HOW IT WORKS

Structures shade pavement areas, preventing that pavement from being heated by the sun. Structures made of materials with lower heat capacity than pavement (including wood, aluminum, and steel) can reduce overall heat absorption by the built environment.

COOLING IMPACT



REFERENCE

Cambridge Urban Forest Technical Report
Tree Planting from Vibrant Cities Lab

MITIGATE

Green Roofs

Green roofs provide shade, remove heat from the air, and reduce temperatures of the roof surface and surrounding air. Using green roofs in cities or other built environments with limited vegetation can moderate the heat island effect, particularly during the day.

HOW IT WORKS

Green roofs reduce the amount of heat absorbed by the roof and building by shading the roof with plants, insulate the roof, and reduce temperatures through evapotranspiration by plants.

COOLING IMPACT

SURFACE AMBIENT IMMEDIATE

REFERENCE

Green Venture Community Greening, Ontario, Canada

MITIGATE

Cool Roofs

A cool roof absorbs and transfers less heat from the sun to the building compared with a more conventional roof. A high solar reflectance, or albedo, is the most important characteristic to understand in terms of how well a cool roof reflects heat from the sun away from a building.

COOLING IMPACT

HOW IT WORKS

Cool roofs reduce heat absorption by reflecting sunlight. Apply light-colored paint to an existing rooftop or select light-colored/high-albedo roofing material.

REFERENCE

Heat Island Cooling Strategies Report, EPA

MITIGATE

Misting Systems

Mist systems at gathering areas create cool spots for people to escape the heat, especially when paired with shade.

HOW IT WORKS
Mist systems suspend tiny water droplets in the air. As mist evaporates, it cools the surrounding air.

COOLING IMPACT

AMBIENT IMMEDIATE

REFERENCE
Mist Cooling in Urban Spaces

MITIGATE

Vertical Greening

Structures like pergolas, bus shelters, canopies, shade sails, awnings, and trellises create shade, providing a place for people to gather that is sheltered from direct sun.

COOLING IMPACT

SURFACE IMMEDIATE

HOW IT WORKS

Vegetation reduces the amount of heat absorbed by walls by shading and insulating structures, and reduce ambient temperatures through evapotranspiration by plants.

REFERENCE

Landscape Architecture Solutions to Extreme Heat
About Green Walls by Green Roofs for Healthy Cities
Cooling Buildings with Green Urban Infrastructure
Increasing Energy Efficiency: Residential Green Walls

MITIGATE

Cool Pavement

Using cool paving on sidewalks, parking lots, and streets that remain cooler than conventional pavements (by reflecting more solar energy and enhancing water evaporation) not only cools the pavement surface and surrounding air, but can also reduce stormwater runoff and improve nighttime visibility.

HOW IT WORKS

Materials with high albedo absorb less heat from the sun. This reduces surface temperatures and reduces the amount of heat stored in the material. For a new site, use light-colored paving material, and for an existing site(s), replace low-albedo surfaces with light-colored materials or apply the high-albedo coating.

COOLING IMPACT

SURFACE IMMEDIATE

REFERENCE

Heat Island Cooling Strategies Report, EPA

MITIGATE

High-Albedo Pavement Coatings

Application of high-albedo coatings to existing pavements such as asphalt surfaces. High-albedo coatings are recommended for less trafficked areas.

COOLING IMPACT

SURFACE IMMEDIATE

HOW IT WORKS

Materials with high albedo absorb less heat from the sun. This reduces surface temperatures and reduces the amount of heat stored in the material.

REFERENCE

Cool Surfaces: Roofs and Roads, Los Angeles, CA

Cool-Kit

Neighborhood

Cool Corridors
Cool Canyons
Site Planning & Solar Orientation
Street Trees

Access to Greenspace
Access to Water
Green Schools
Heat Reduction in Parks

MITIGATE

Cool Corridors

A network of interconnected greenways and roadways designed with high levels of tree canopy and vegetation cover to increase connectivity and support active transportation within a cool and shaded environment.

HOW IT WORKS

Trees and vegetation cool through shade and evapotranspiration. When accumulated into a connected network, this cooling impact compounds and can extend to nearby areas.

COOLING IMPACT

REFERENCE

Landscape Architecture Solutions to Extreme Heat, ASLA

ADAPT

Cool Canyons

The strategic design and massing of buildings (size, shape, and orientation) to maximize air circulation, funneling air from waterways, parks, or other cool areas into the city.

HOW IT WORKS

Cooling breezes reduce air temperatures in urban areas. Tall and bulky buildings can affect wind patterns and should be oriented to funnel rather than block airflow from cool areas. In regions that experience cold winters in addition to hot summers, the need for cooling breezes in summer should be balanced with the need to limit cold winds and high wind speeds in winter.

COOLING IMPACT

AMBIENT IMMEDIATE

REFERENCE

Landscape Architecture Solutions to Extreme Heat, ASLA

ADAPT

Site Planning & Solar Orientation

Placement of site features and orientation of buildings to locate occupiable space in locations that receive summer shade, such as on the north sides of tall buildings, under shade structures, or under trees.

HOW IT WORKS

Buildings create deep, permanent shade which can be a respite during extreme heat events. Gathering areas in sunny locations may be less appealing in summer than those in shady locations.

COOLING IMPACT

SURFACE IMMEDIATE

REFERENCE

Environmental and Natural Resources 2 Building, Tucson, AZ

MITIGATE

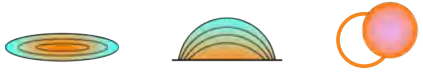
Street Trees

Planting of large-canopy shade trees in the public right-of-way. Street trees may be planted behind the sidewalk, in a parkway strip, in bulb-outs, or in medians and should be planted at a regular and continuous spacing to provide continuous shade.

HOW IT WORKS

Trees cool through shade and evapotranspiration. Streets represent one of the most concentrated areas of pavement, which contributes significantly to urban heat island. Shading this pavement can prevent excess heat accumulation in the built environment.

COOLING IMPACT



REFERENCE

Landscape Architecture Solutions to Extreme Heat, ASLA
Tree Equity Score

MITIGATE + ADAPT

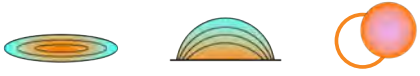
Access to Green Space

Increase equitable access to public green spaces such as parks, schoolyards, civic spaces, and greenways. Ensure that disadvantaged communities have an equal amount of green space area as wealthier communities and are within walking distance of all residents.

HOW IT WORKS

Parks and green spaces create a cool island within the city which can be a respite for residents during extreme heat events. The cooling impact of larger parks can extend into adjacent neighborhoods.

COOLING IMPACT



REFERENCE

Gary Comer Youth Center, Chicago, IL

ADAPT

Access to Water

Increase equitable access to water such as drinking fountains, public pools, splash pads, mist pads, and natural water courses.

HOW IT WORKS

Water features have a strong cooling impact due to evaporative cooling, which lowers air temperatures locally and extends into nearby areas. These cool places within the cities provide residents free and accessible respite for residents during extreme heat events.

COOLING IMPACT

REFERENCE

Scioto Mile and Greenways, Columbus, OH

MITIGATE

Green Schools

Prioritize public funds for tree planting and greening at schools.

HOW IT WORKS

Since children are especially vulnerable to heat and spend the warmest part of the day at school, prioritizing cooling solutions at schools can significantly reduce their exposure to extreme heat.

COOLING IMPACT

REFERENCE

Green Schoolyards America
California Schoolyard Forest System

MITIGATE + ADAPT

Heat Reduction in Parks

Prioritize public funds for tree planting and other cooling measures at parks, especially at parks in disadvantaged communities.

HOW IT WORKS

Parks can be a respite for residents during extreme heat events. The larger and greener the park, the more its cooling impact extends into the community.

COOLING IMPACT

REFERENCE

Landscape Architecture Solutions to Extreme Heat, ASLA

Cool-Kit

City

Heat Reduction in the Public Realm
Urban Forestry Equity Planning
Urban Forestry Workforce
& Capital Investment

Tree Ambassadors
Public Outreach & Education
Greenspace Planning
Incentive Programs

MITIGATE

Heat Reduction in the Public Realm

Dedicating public funds to systematically implementing cooling measures such as tree planting, greening, depaving, cool corridors, etc. in the public realm.

HOW IT WORKS

City, county, or regional initiatives for heat reduction in the public realm take the burden for tree planting off of residents. This is especially important in disadvantaged communities, which tend to experience the highest heat burden in addition to other environmental, health, and financial burdens.

CASE STUDIES

Cool Neighborhoods NYC, New York, New York
"Policy of Shade," Seville, Spain
Green Spaces Make Healthier Places, Louisville, KY

MITIGATE

Urban Forestry Equity Planning

Analysis of urban forest distribution within the city, particularly how tree distribution overlaps with disadvantaged communities, historically redlined neighborhoods, surface temperatures, green space access, pollution, and other environmental justice issues.

HOW IT WORKS
Co-analysis of these issues allows for the identification of tree planting priority areas or priority streets to increase cool equity.

CASE STUDIES
Urban Canopy Policy, Cincinnati, OH
Portland Parks & Recreation: Planting an Equitable Forest, Portland, OR

REFERENCE
Tree Equity Score

MITIGATE

Urban Forestry Workforce & Capital Investment

Long-term funding for the training and retention of qualified urban forest workers, and for the tools, programs, and water needed to maintain a healthy urban forest.

HOW IT WORKS

Urban forests require regular maintenance to ensure tree health for long-term performance. Qualified tree workers are needed to perform tree selection and placement, planting, pruning, pest control, tree health and safety assessments, and tree replacement.

CASE STUDIES

Changing the Heritage Narrative: Detroit, MI

Roots to Re-Entry, Philadelphia, PA

MITIGATE + ADAPT

Tree Ambassadors

Programs to create trained and paid community leaders to build awareness within the community of the benefits of urban trees, the need to plant more trees in low-canopy communities, and the available resources to support tree planting and maintenance.

HOW IT WORKS

Tree planting within residential neighborhoods requires individual action by homeowners. Outreach and education can increase willingness to plant trees, support homeowners in selecting the right kind of tree, and ensure its long-term success. Tree ambassadors can build trust between cities, non-profits, and communities to facilitate this dialogue.

CASE STUDIES

Tree Ambassador Program, Los Angeles, CA
Baltimore Tree Trust, Baltimore, MD
New Jersey Tree Foundation

MITIGATE + ADAPT

Public Outreach & Education

Creation of programs and resources to increase awareness of extreme heat, advocate for nature-based solutions, and increase awareness of existing programs and resources to mitigate the public health impacts of extreme heat.

HOW IT WORKS

Public awareness and acceptance are critical to ensure support for long-term funding of urban cooling strategies.

CASE STUDIES

Los Angeles Extreme Heat Program
Baltimore Tree Trust, Baltimore, MD

MITIGATE

Green Space Planning

Analysis and planning of green space networks to maximize cooling benefits, and increase equitable distribution.

HOW IT WORKS

Studies have found that larger and better-connected green spaces can provide greater reductions in heat island, and can produce cooling effects that extend further distances into the city. Planning should prioritize equitable distribution, especially within disadvantaged communities, and connectivity of parks and green spaces.

CASE STUDIES

Cool Neighborhoods NYC, New York, New York
The Rail Park, Philadelphia, PA

REFERENCE

Landscape Architecture Solutions to Extreme Heat, ASLA

MITIGATE

Incentive Programs

Policy initiatives to incentivize and require implementation of cooling strategies for new construction and retrofit projects.

HOW IT WORKS

Incentives may increase property owners' willingness to invest in voluntary cooling measures such as tree planting or depaving. Updates to building codes, citywide climate action plans, or other legislation applies to projects seeking planning or construction permits and can require the use of cooling measures for new projects.

CASE STUDIES

Cool Surfaces: Roofs and Roads, Los Angeles, CA
Toronto Green Roof Bylaw & Eco-Roof Initiative Program, Toronto, Canada

Cool-Kit

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Cool Impact	 SURFACE	 AMBIENT	 IMMEDIATE	 LONG-TERM
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De-paving	●		●	
Shade Structures	●		●	
Green Roofs	●	●	●	
Cool Roofs	●		●	
Misting Systems		●	●	
Vertical Greening	●	●	●	
Cool Surface	●		●	
High-Albedo Pavement Coatings	●		●	
Cool Corridors	●	●		●
Cool Canyons		●	●	
Site Planning + Solar Orientation	●		●	
Street Trees	●	●		●
Access to Greenspace	●	●		●
Access to Water		●	●	
Green Schools	●	●	●	●
Heat Reduction in Parks	●	●	●	●

Definitions

Ambient Temperature
Temperature (typically measured in degrees F or C) of the air for a given area. This is the temperature typically included in weather reports.

Albedo
The proportion of light that a surface reflects. Materials with high albedo (such as white-painted roofs or light-colored pavement) absorb less heat from the sun.

Cool Equity
Increase heat resiliency with a focus on communities that are disproportionately impacted by extreme urban heat and other environmental burdens.

Disadvantaged Communities
Areas that most suffer from a combination of economic, health, and environmental burdens. These are typically identified through mapping at the census tract level as the overlap of socioeconomic and environmental indicators. Disadvantaged communities may be economically disadvantaged, overburdened by pollution, and underserved in housing, transportation, utility infrastructure, and healthcare. (Cite State of CA and Whitehouse Climate and Economic Justice Screening Tool).

Evaporation/Evaporative Cooling
Reduction in temperature as water changes from a liquid to a gas (evaporates). During evaporation, water removes latent heat from the surface or environment - this is the physical basis of sweating as a mechanism to cool our bodies.

Evapotranspiration
The process by which water is transferred from the land to the atmosphere as a combination of transpiration by plants and evaporation directly from the soil.

Extreme Heat
A period of high temperatures that are significantly higher than average, which poses a threat to human health.

Greenway
A corridor or linear strip of undeveloped land in an urban designated for recreational use, shared-used paths, and environmental protection.

Heat Capacity
A property of a building material that contributes to its thermal mass - how much heat it can store. Materials with a high heat capacity can absorb and store a lot of heat, which is later released back into the air, warming the surrounding environment.

Nature-based Solutions
Sustainable planning, design, environmental management, and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience.

Surface Temperature
The temperature of a given surface in the environment, which is affected by solar exposure, the heat capacity of that surface, and other thermal processes such as evapotranspiration. Surface temperature may be significantly higher or lower than air temperature, but high surface temperatures contribute to urban heat island (UHI).

Transpiration
The process by which water is absorbed by a plant's roots, moves through the plant, and is lost to the air typically through evaporation from pores in leaves, stems, and flowers.

Urban Heat Island (UHI)
Increased temperatures in a metropolitan area compared to its non-urbanized surroundings, a result of human activity and heat absorption by urban surfaces.

INSTAGRAM
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