

Urban Greening:

integrated approaches

... multiple solutions



What is Urban Greening?

Urban greening restores a patchwork of natural resources in and around communities. It includes our urban forests, parks, community gardens, river parkways, greenbelts, bicycle and pedestrian trails, green roofs, and open space.

Why is urban greening important?

Studies show that urban greening is integral to the ecological, economic, and societal well-being of our communities. Our green and open spaces provide a number of valuable services to the environment, including cleaning our air and water, providing homes and food for wildlife, and saving energy through shade. They also offer economic and social benefits such as raising property values, rekindling neighborhood pride, improving health and well-being, and providing places for children to play. When planned, implemented, and managed properly, urban greening can significantly improve the quality of our lives for decades to come.



Multiple Benefits of Urban Greening

Urban greening provides many benefits to the community and to the greater ecosystem. Projects designed to achieve multiple objectives provide integrated and innovative approaches that result in more beneficial outcomes.

For example, a park can be designed as a single-purpose facility and provide a place for kids to play; or it can be designed with multiple objectives to provide both active and passive recreation, wildlife habitat, community gardens, stormwater collection and reuse systems, energy conservation measures, educational opportunities, community beautification, water quality improvements, and more.

How do you think our capital investments should be made?

Multiple-objective urban greening projects can provide:

- Societal and human health gains
- Recreational opportunities
- Air quality improvement
- Energy savings
- Water quality improvement
- Water supply augmentation
- Greenhouse gas emission reductions
- Investments in people
- Economic advantages

VISTA HERMOSA, a project of the Santa Monica Mountains Conservancy, lies on the edge of downtown Los Angeles in a neighborhood that previously had very little public green space. The park was established on a remediated oil field site and provides a full-scale soccer field with lights, many active and passive recreation opportunities, native plants and trees, play areas, community gathering places, restrooms equipped with green roofs, an underground stormwater capture and collection system, and more.

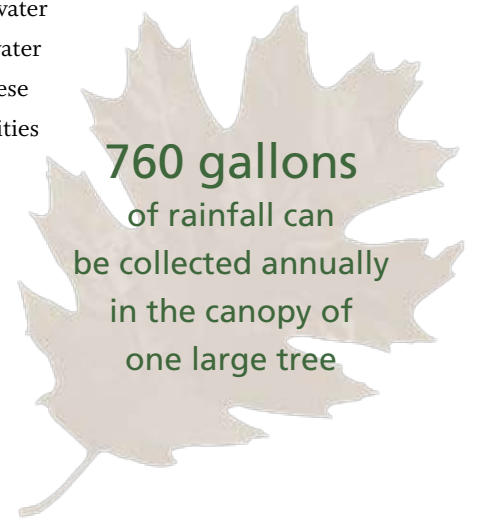




Water

Urban greening can play a significant role in providing Californians with healthy watersheds, reliable water supplies, and clean water. During heavy storms, urban greening can reduce the number of pollutants and contaminants that reach our waterways as well as reduce soil erosion, runoff, and flooding.

Urban greening projects can provide a reliable local water source, by collecting stormwater for on-site use and groundwater replenishment. Without these greening projects, communities would need to increase sewage and stormwater drainage systems and waste-treatment capacities to handle increased runoff as they increase development.



OPEN CHARTER ELEMENTARY SCHOOL had an opportunity to “green” its hardscaped campus and emulate some of the site’s original watershed functions. A Santa Monica Bay Restoration grant provided this opportunity to TreePeople, L.A. Unified School District, the L.A. County Open Space District, and L.A.’s Bureau of Sanitation. Design objectives included: improving student health and safety by providing shaded play areas, reducing water pollution by preventing runoff, reducing flood hazard and conserving water by capturing rainfall, conserving energy by reducing the urban heat island effect and reducing the need for air conditioning, and reducing the solid waste stream by reusing greenwaste as mulch. An underground treatment-and-storage facility captures campus runoff for irrigation use and reduces the pollutant load to Santa Monica Bay (TreePeople, 2005).

Energy and Air Quality

Urban greening projects play an important role as a natural, “green” solution to energy conservation and air quality improvement, both of which contribute to mitigating climate change. In addition to sequestering carbon, trees and other green infrastructure can modify temperatures, filter air pollutants, and conserve energy.

Shade and cooling provided by trees, green roofs, and other green infrastructure reduces the energy needs onsite for air conditioning. This also results in reduced demand for energy production at power plants, thereby reducing gases that produce ozone, a major component of smog, greenhouse gases, and other air pollutants.

Surface temperatures of urban structures are 50 – 70°F higher than ambient air temperatures. Increased surface temperatures result in raised temperatures in urban settings. This phenomenon, known as the urban heat island effect, can increase air temperature 2 to 8°F. When temperatures are increased, there is a higher demand for energy. Urban forests, green roofs, and other green infrastructure help to keep the temperature down through shading and evapotranspiration.



IN 1998, the National Aeronautics and Space Administration (NASA) took flyover thermal image shots of Sacramento to analyze the urban heat island effect. The urban heat island effect is caused by condensed areas of hard surfaces that radiate heat from the sun, which results in higher temperatures. For example, the red areas in the image above are 118° F, while green areas are 82° F. One of the most effective ways to mitigate urban heat islands is to increase tree canopy. (Sacramento Tree Foundation, 2006)

25-40%
is saved on
summer cooling
costs by the shade
of a mature tree

THE SACRAMENTO MUNICIPAL UTILITY DISTRICT spends approximately \$2 million annually on a shade tree program for its customers. They partner with the Sacramento Tree Foundation to provide homeowners with as many as 10 shade trees per home, provide expertise to properly site trees for optimal energy savings, and educate homeowners about the best way to plant and maintain their trees.

730 lbs
of air pollutants
are filtered per year
by one tree



Public Health and Community Benefits



Urban greening provides parks, trails, shade, and healthy places for children and adults to recreate. Active people are healthy people. Studies show that being outdoors results in more physical activity. Regular physical activity can help reduce the risk of heart disease, type 2 diabetes, metabolic syndrome, and certain cancers.

Community gardens are also an important part of urban greening. Research suggests that community gardens provide numerous health benefits, including access to food, improved nutrition, increased physical activity, and improved mental health. In addition, community gardens promote social health and community cohesion.

Natural shade reduces exposure to UV radiation, which may help reduce the risk of skin cancer. Natural settings are also known to increase healing rates and improve patients' moods during recovery and hospital stays.

**Young children
living in areas with more
street trees have a lower
prevalence of asthma**



**Residents in areas
with the highest levels of greenery
were 3 times as likely to be physically
active and 40% less likely to be
overweight or obese than those living
in the least green settings**

Customers

are willing to pay up to 11% more for the same products when shopping in “greened” business districts

Urban forests, parks, and open space are key factors in creating sustainable communities that attract new business and residents. Urban greening can increase residential property value, attract consumers, reduce crime, and enhance pedestrian-friendly amenities.

Studies show that people living in buildings with trees and greenery outside know their neighbors better, socialize with them more often, and have stronger feelings of community.

Views of nature have also been shown to increase the rate of stress recovery in children and adults, increase recovery rates after surgery, as well as enhance attention and improve concentration.



Property

shaded by trees can be up to 10% more valuable than unshaded lots

Urban greening provides benefits in water conservation, water quality, air quality, energy conservation, climate change, public health, and economic vitality. By cost-effectively providing multiple benefits to urgent problems, urban greening can free up resources when compared to traditional approaches that often cost more money.

Urban greening — improving the environment, economy, and community — an integrated approach that leads to multiple solutions.



California ReLeaf's mission is to empower grassroots efforts and build strategic partnerships that preserve, protect, and enhance California's urban and community forests. The organization works statewide to promote alliances among community-based groups, individuals, industry, and government agencies, encouraging each to contribute to the livability of our cities and the protection of our environment by planting and caring for trees.

California ReLeaf offers a variety of programs and services, including:

- Coordinating the California ReLeaf Network, a growing alliance of over 100 urban forestry groups that share the common goals of planting and protecting trees.
- In partnership with the USDA Forest Service, administering \$5.5 million in funds through the California ReLeaf American Recovery and Reinvestment Act Grant program.
- Monitoring state and federal legislation and keeping the urban forestry community informed of opportunities to influence public policy on behalf of urban trees.
- Administering tree planting, tree care, and volunteer outreach grant programs on behalf of the State of California.
- Providing assistance, information, and referrals to individuals, organizations, and agencies working to improve the management of California's urban forests.

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