



SDERC

Shade Trees

San Diego
**REGIONAL
ENERGY
OFFICE**



Benefits:

The addition of a shade tree:

- Reduces energy consumption and peak power needs by shading and cooling homes naturally, thereby lowering A/C usage.
- Reduces the velocity of wind, which slows the infiltration of outside air into inside spaces.
- Reduces carbon dioxide, NO_x, SO_x and other emissions.
- Supplies yard shade, decreasing the need to water the lawn.
- Causes evapotranspiration, which converts liquid water in leaves to vapor, thereby cooling the air.
- Prevents erosion, controls storm drain runoff, enhances groundwater recharge, provides wildlife habitat, supplies wood and leaves, and sequesters carbon (from tree growth).
- Can enhance property values by as much as 15%.




Application:

Use trees to shade the east, south, and west building facades.



Potential Energy Savings:

Planting shade trees reduces air conditioning loads. SDREO estimates a savings of 0.17 kW per house with proper shading. Assuming 10% of San Diego homes are air conditioned, this equates to a 10 MW demand reduction.



Case Study:

Tree shading can be used to save energy in both hot and cold climates. Trees directly cool buildings and other surfaces by shading them from solar radiation and shield homes from wind in the winter. In the EPA's Total Community Super Credit Project, the kW savings from adding tree shading to existing streets in a south coastal climate showed that changing the tree canopy from 0% to 69% on a street 42 feet wide, resulted in 157 kWh saved per house.



Additional Information:

Free trees are available through SDREO's **Cool Communities Shade Tree Program** at www.sdenenergy.org.



Considerations:

Before planting new trees, carefully consider the placement in order to avoid problems that may occur from root growth. Specific attention should be given to sidewalks and structures, electricity and telephone high wires, and underground pipelines.

San Diego Energy Resource Center
8520 Tech Way San Diego, CA 92123
1-866-SDENERGY
www.sdenenergy.org