

## Research on Savings in Operating Costs in Green Buildings

*The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force*, October 2003, developed by Capital E, cites numerous studies that demonstrate the lower energy costs precipitated by green buildings.

### Lower Energy Costs

- "Reasonably conservative estimates of direct energy savings alone significantly exceed the marginal cost of building green... A 30 percent reduction in energy, for a 100,000 square foot office building, is worth \$44,000 per year, with the 20-year present value of expected energy savings worth over half a million dollars."
- Measures for heat island reduction (such as "cool roofs") reduce the need for interior cooling of the building (by 10 to 30 percent) and of surrounding buildings. For the city of Los Angeles, heat island reduction measures are estimated to result in potential direct savings of \$100 million in annual residential air conditioning costs, \$70 million in indirect cooling cost reductions of other buildings due to reduced ambient air temperatures, as well as \$360 million savings associated with the reduction of smog due to ozone reductions from less air conditioning.
- The building commissioning process gives the owner assurance that they are getting a high-quality, high-performance building that operates and performs as designed. "Resulting savings more than pay for the cost of commissioning for both green and non-green buildings" through reduced call-backs, extended equipment life, proper performance of systems, etc. These benefits result in O&M savings of at least 5 percent (or potentially as much as 25 percent), which translates into 20-year present value savings of \$8.47 per square foot.

### Lower Water Costs

- "The Metropolitan Water District study found that commercial water use volume could be cost-effectively reduced (average payback 1.7 years) by approximately 23 percent. The authors note that estimates are conservative and only include relatively simple technologies or strategies."
- "The California Urban Water Agencies findings [suggest] a 20-year present value of \$0.51 per square foot for water savings from green buildings."
- "A waterless urinal saves, on average, 45,000 gallons of water a year. Twenty-two waterless urinals save approximately 1 million gallons of water per year." (ASC Hygiene)

To read the entire report, go to:

<http://www.ciwmb.ca.gov/greenbuilding/Design/CostIssues.htm#Cost&Benefit>  
[http://eetd.lbl.gov/emills/PUBS/Green\\_Buildings.html](http://eetd.lbl.gov/emills/PUBS/Green_Buildings.html)