

ZNE Schools & Public Buildings

A ZNE building produces as much energy as it consumes over the course of a year

K-12 schools, colleges and public buildings represent key opportunities for local governments to lead on zero net energy policies and practices. As local examples of the feasibility and benefits of ZNE increase, schools and public buildings can educate the broader public about sustainability and green building, and show a commitment to reducing climate impacts.

ZNE performance in these buildings means not only are they less vulnerable to the instability of energy prices, but they're also more resilient to the impacts of severe weather events. These ZNE buildings can also create safe havens for the community during emergencies as places where the power stays on because these buildings have the ability to generate their own energy.



Chartwell School | Seaside, CA
Photo: Michael David Rose

Many schools have already become leaders in energy efficiency by renovating or building new high performance schools through participation in the Coalition for High Performance Schools (CHPS) program. CHPS is leading a national movement to improve student performance and the entire educational experience by building the best possible schools. Now, further leadership is coming from the California governor's office through an executive order directing all new state buildings to achieve zero energy building status by 2025.

“The public sector has a responsibility to lead.”

Roadmap to Zero Energy Public Buildings,
a report by the Northeast Energy Efficiency Partnership (NEEP)

Marin Country Day School | Corte Madera, CA
Photo: Michael David Rose



ZNE schools and public buildings have lower operating costs and, over time, save money in energy bills that can be spent on services and programs.

Kentucky's Turkey Foot Middle School was rebuilt as a ZNE school, and now uses 60% less energy than the traditional American middle school.

Turkey Foot Middle School Comparison 2011–2012 Savings of \$56,396

| | Old Turkey Foot | New Turkey Foot | Difference |
|--------------------|-----------------|-----------------|-----------------|
| Square Footage | 66,523 | 133,000 | ↑ 199.9% |
| Annual Energy Cost | \$94,954 | \$38,558 | ↓ 59.4% |
| EUI (kBtu/SF) | 79.2 | 13.6 | ↓ 82.8% |

With energy bills at California's K-12 public schools totaling more than \$1 billion a year, innovative energy solutions like ZNE are an option to put money back into classrooms and bring public buildings into the 21st century. School district leaders and community leaders in California can learn from examples of other schools and public buildings around the country that have managed to go ZNE. Benefits include:

- Heightened student performance & increased average daily attendance

- Better student & teacher health
- Improved teacher satisfaction & retention
- Reduced operating costs

ZNE schools and public buildings are visually and acoustically more comfortable, easy to maintain and operate, and a teaching tool that stimulates learning and innovation.

What Can Decisionmakers Do to Advance ZNE Schools & Public Buildings?

- 1 Set a ZNE commitment with performance goals for your district, campus or building.
- 2 Educate decisionmakers, capital projects and planning staff, facility managers and operators about ZNE benefits, costs and performance goals.
- 3 Incorporate energy performance criteria into design, construction and planning contracts (including RFQ's, RFP's and other contract-related documents).
- 4 Draw inspiration and lessons learned from case studies of other ZNE schools and public buildings in California and nationally.
- 5 Take advantage of ZNE incentive programs and technical assistance including the Savings by Design Program and the PG&E ZNE Pilot Program.



Resource and energy efficient ZNE buildings improve the quality of education for school children and university students by providing a healthy and comfortable indoor environment.

Resources for more information:

California Public Utilities Commission ZNE Information
www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Zero+Net+Energy+Buildings.htm

New Buildings Institute ZNE Resources
<http://newbuildings.org/zero-net-energy-resources>