“School as a Tool” Protocol

- Establish a Green Team
- Conduct a School Environment Survey
- Integrate Environmental Literacy into Existing School Curriculum
- Inform and involve the Community
- Monitor and Evaluate Progress
- Apply to the Green Ribbon Schools Program
Policy Prerequisite 8: **Utilize the Facility as a Teaching Tool** Required

PO P 8. Develop and implement a plan to utilize the facility as a teaching tool for environmental quality, energy efficiency, and renewable energy. The plan must include annual training of all staff in the educational and environmental benefits of the facility, and an informational kiosk or other display that presents the educational and environmental benefits associated with the CHPS school.

School as a Teaching Tool
Policy Prerequisite 8: 

**Utilize the Facility as a Teaching Tool Required**

A high performance school offers an excellent opportunity to serve as a teaching tool for students, staff, and the public. A plan that fulfills this requirement will include at least the following elements:

- At least one annual workshop for staff that covers the educational and environmental benefits of the facility
- A plan to incorporate education regarding the high performance aspects of the school in science and vocational curricula, as appropriate depending on grade level taught
- An informational kiosk, or other display, in a public area of the school that presents the educational and environmental benefits of the CHPS project

**Documentation for Policy Prerequisite 8**
Submit a detailed plan as outlined above, including schematic for the kiosk and curricula outline.

**School as a Teaching Tool**
Developing Environmental Citizens - Greening the Curriculum

School as a Tool: Implementing the Sustainable School Protocol

1) **Establishing a green team** consisting of at least students, parents, community stakeholders, teachers, and staff that will be responsible for:
   - Coordinating and integrating the sustainable schools elements such as environmental (built and natural) curriculum including recycling, EPA’s “Tools for Schools”
   - Organizing and directing activities at the school such as creating a kiosk, contributing to a website about sustainable schools and facilitating communication among the whole school community

2) **Adopt an Environmental Vision Statement**

3) **Conduct a School Environmental Survey**

4) **Create a Green School Action Plan**

5) **Monitor and Evaluate Progress**

6) **Integrate Greening into the Curriculum**
   Integrate greening activities into science, art, math, language arts and electives
   Use the school as a hands on laboratory which offers opportunities for real-world problem solving
   Allow students to undertake study of themes such as energy, water, forest, toxic pollution, and waste.
   Involve the entire school in initiatives such as saving water, recycling and saving energy
   Promote outdoor education and time spent in nature (school yard, park or field trip)

7) **Inform, Involve and Celebrate** – Recognize achievements and partner with external organizations

RI School as a Teaching Tool
Operator & Occupant Engagement

monitor energy consumption wirelessly.

be rewarded for efficient energy habits.

control outlets and compare to others.

set timers & powerdown

calculate & compare

set goals, chart progress,
& compare with coworkers

most efficient!
140 kWh
200 kWh
270 kWh
350 kWh
400 kWh

most improved!
50 kWh
100 kWh
160 kWh
$500/month

team’s savings

eMetric by Jason Deperro

2016 Prop 39 ZNE School Retrofit Workshops
Using the School as a Teaching Tool

## Educational Display

### Intent
Raise the community's knowledge about the basics and benefits of high performance schools.

Using the school as a learning tool, students, staff, and the community can benefit by having an educational display to illustrate the healthy, efficient, environmentally sustainable features of the school.

The educational display may have further connections in II 6.1 – Educational Integration.

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<thead>
<tr>
<th>II 5.0 – Educational Display</th>
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<th>Applicability</th>
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<td>All projects.</td>
<td>Design Review, Construction Review, Performance Review</td>
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The East Bay MET School’s solar thermal energy system provides more than 20% of the building’s domestic hot water heating consumption. The school’s on-site renewable energy can be monitored on the school’s website and a renewable energy educational display was installed in the building.

Credit: RGB Architects
The MET is implementing:
- EPA's Tools for Schools
- No idling policy for buses
- All newly purchased equipment will be ENERGY STAR

**Zero net energy plan**
A zero net energy school facility is designed to be optimally efficient and, over the course of a year, generates energy on-site, using clean renewable resources, in a quantity equal or greater than the total amount of energy consumed on-site.

And of course, the School will be used as a teaching tool for environmental quality, energy efficiency and renewable energy - starting right here in the stairwell.

*Credit: East Bay Met School*
Green schools have benefits that extend beyond the actually building. Alternative transportation options Alternate fuel buses reduce CO2 emissions and reduce smog and ground level ozone. Bike racks, safe bike paths and sidewalks encourage an active lifestyle and decrease emissions.
- NE-CHPS
- NEEP’s Regional Operations and Maintenance Guide
- Roadmap to Zero Energy Buildings: Progress Report
- Building Energy Rating and Disclosure Policies; Lessons from the Field
- LED Street Lighting Assessment
- Streamlining Data Access Report
- School Exemplars
NE-CHPS v3.1 CRITERIA

Categories:

• Integration & Innovation
• Indoor Environmental Quality
• Energy
• Water
• Site
• Materials & Waste Management
• Operations & Metrics

www.chps.net/resources
DOE Zero Energy Schools Accelerator Program

Key Objective

School Districts (cities and counties) and states develop a replicable road map that identifies barriers and demonstrates processes to achieve cost-effective zero energy K-12 schools
Accelerator Structure for the Program

National Partners
- Non-profit organizations, utilities
- Main role: Help recruit partners, outreach, industry education

Implementing Partners
- States/School districts

Accelerate construction of K-12 Zero Energy Schools

- Develop state/district level (roadmap for ZE)
- Identify schools with ZE goal
- Implement roadmap
Greening Schools – A joint project between Illinois EPA and the Waste Management Resource Center. www.greeningschools.org/resources/curricula/cfm

National Wildlife Federation – Resources about greening school grounds, facilities, and curriculum.
http://www.nwf.org/Get-Outside/Be-Out-There/Educators/Resources.aspx

Michigan State University – Integrated Pest Management curriculum
http://www.ipm.msu.edu/community_and_home/community_and_sch schools/school_ipm_and_curriculum

US Department of Energy – Energy Kids
http://www.eia.gov/kids/

US Environmental Education Agency – Curriculum and activities for teachers
http://www.epa.gov/osw/education/teach_curric.htm

Edible School Yard – K-12 Edible education curriculum.
http://edibleschoolyard.org/resources-tools

IDEO – Investigative learning curriculum
http://www.ideo.com/work/investigative-learning-curriculum/

Project H – www.projecthdesign.org

School as Teaching Tool - Resources
• ZNE Project Profiles
• News & Events
• Policy & Planning Updates
• Upcoming Training & Education
• New Research
• Low Energy Building Innovations

ZNE ACTION BULLETIN
Progress Towards Zero Net Energy Buildings

Contact connie@newbuildings.org to subscribe
Existing ZNE & Ultra-Low Energy Case Studies

UC Case Study Briefs & NBI ZNE Case Studies
newbuildings.org/case-studies-zne-projects

E Case Studies

I Registry http://newbuildings.org/share

Getting to Zero Database
newbuildings.org/getting-to-zero-buildings-database
5 GREAT NEW TOOLS FOR ZNE BUILDINGS

1. ZNE Message Platform
   Key messages for target audiences on the what and why of ZNE.

2. "Intro to ZNE" Presentation
   Customizable powerpoint presentation provides an overview of California's goals and policies for ZNE, key strategies, and case study examples.

3. ZNE Companion Guide/Fact Sheets
   Collection of FAQs, resources, design strategies, and key messages for designers, commercial building owners, policymakers, and decisionmakers of schools and public buildings.

   Read about ZNE and ultra-low energy building examples, including design strategies, costs, and lessons learned.

5. ZNE Action Bulletin
   Sign up for our quarterly e-newsletter for updates on ZNE news, events, trainings, case studies, planning, policy, and research. To sign up, or to get more info about the toolkit, email heather@newbuilding.org.

www.newbuildings.org/zne-communications-toolkit
Fact Sheets & ZNE Companion Guide

ZNE for Schools
ZNE Design Fundamentals
ZNE for Architecture & Engineering
ZNE for Developers & Real Estate Professionals
ZNE for Homeowners & Homebuyers
ZNE for Lender’s Appraisers & Investors
ZNE for Buildings Owners & Operators
ZNE for Policymakers & Local Governments
ZNE FAQ’s
Technology Guides & Resources

Rooftop Unit HVAC Efficiency

Repair, Retrofit, Replace
Framework for Energy Savings in Commercial Rooftop Equipment

CABA
ZERO NET ENERGY BUILDING CONTROLS
Characteristics, Energy Impacts and Lessons

Plug Load Best Practices
Managing Your Office Equipment Plug Load

Guide to Energy Savings
Plug loads can be reduced through low- and no-cost measures that are relatively straightforward to implement.

This Guide shows how small changes can cut energy use and save energy bills.