

# LOS ANGELES UNIFIED SCHOOL DISTRICT

## HIGH PERFORMANCE SCHOOLS PROGRAM 2008 ANNUAL REPORT

April 6, 2009

### I. INTRODUCTION

- Report Purpose: This 2008 Annual Report on the Los Angeles Unified School District High Performance Schools Program fulfills the directive of the Board of Education's October 28, 2003, *Sustainability and the Design and Construction of High Performance Schools* resolution. The Resolution requires that all new schools meet and exceed, to the maximum extent possible, the Collaborative for High Performance Schools (CHPS) criteria, and that modernization and repair projects incorporate appropriate high performance strategies. This report summarizes the 2008 accomplishments and defines the major challenges for the program going forward.
- LAUSD Sustainability Program: LAUSD is developing and implementing a comprehensive sustainability program, of which high performance schools is one element. This report focuses on high performance schools. The sustainability program's status will be reported separately to the Board on a quarterly basis.
- CHPS 2009: A new version of CHPS, CHPS 2009, was adopted in early 2009 and will take effect August 1 concurrent with the revised State Title 24 energy efficiency standards. CHPS 2009 includes revisions to many existing credits and prerequisites, as well as new credits for a number of topics including climate change, grid neutral/zero net energy, life cycle analysis of materials (taking account the costs and benefits of materials over their life rather than just considering first cost) and mercury reduction. LAUSD played an active role in the development of the standards. Almost all currently programmed LAUSD new schools have begun design and are therefore utilizing previous CHPS versions. CHPS 2009 will therefore only impact LAUSD modernization projects and possibly a few new schools if they are not registered as CHPS 2006 projects before CHPS 2009 takes effect.

### II. ACCOMPLISHMENTS & PROGRAM DETAILS

- Awards: LAUSD received the 2008 Millennium Award from Global Green USA for "its ongoing leadership in providing students with healthy, sustainable learning environments." In addition, LAUSD Board of Education member Julie Korenstein accepted the Green California Schools Pioneer for her "commitment

to establishing a green building program.”

- New Construction Summary: All new construction projects continue to meet or, more frequently, exceed the minimum CHPS requirements. Phase II new schools utilize CHPS 2002; Phase III and IV schools use CHPS 2006. The 36 Phase II have completed design and earned an average of 33 points, 5 points over the CHPS 2002 28 point minimum. The 25 Phase III and IV schools are currently under review and projected to meet or exceed the CHPS 2006 minimum of 32 points. The installation of renewable energy systems may increase the final scores.

During design, each project is reviewed four times for CHPS compliance. As it has for the past four years, Global Green USA works with District staff to review the CHPS performance of new schools, and, at the completion of design verifies each project’s CHPS score. During construction, a monitoring program ensures that all high performance elements are fully implemented.

A second rigorous third party review is conducted by DSA when the District applies for Prop. 1D high performance school grants (details below).

Lastly, the District is benchmarking its new construction program against LEED for Schools in order to be able to educate the public that the performance of LAUSD projects is equal to at least LEED Silver. LEED for Schools is similar to CHPS, but is more widely recognized because the various LEED systems are utilized for a wide variety of building types from office buildings to single family homes. LEED projects are certified as Certified, Silver, Gold or Platinum. LEED for Schools certification will be sought for four new schools: Taylor Yard HS, CRES #22, VRES #13 and SRHS #15. All four are expected to earn at least Silver, with a target of Gold. CHPS remains the District’s focus because it was developed for California schools, because Proposition 1D high performance incentives are available, and because LEED certification is relatively expensive.

Existing Facilities Summary The District’s program to incorporate high performance school concepts into existing facilities and new buildings on existing campuses was expanded during 2008. To date, the focus is on energy and water efficiency, and renewable energy. A number of the initiatives are detailed under *High Performance Standards, Research & Construction Protocols*, below.

- LAUSD Measure Q: In November 2008, voters approved Measure Q, a \$7.0 billion, 10 year bond focused on school modernization projects. Measure Q includes \$500 million for sustainability programs, including high performance schools, as follows:
  - \$200 million: Solar energy systems
  - \$200 million: Emerging technologies
  - \$50 million: Energy and water conservation
  - \$50 million: Compressed natural gas (CNG) school buses

- Incentives: LAUSD continues to seek to maximize financial grants and incentives from State and utility incentive programs, with the focus on the following programs:

- Proposition 1D High Performance Schools (HPS) Incentives: Prop. 1D includes \$100 million in incentives for high performance schools. To date, LAUSD has earned approximately \$13 million for 37 new schools, more than any other California school district. An additional 17 schools will be submitted during 2009.

Prop. 1D grants, which are intended to offset 50 percent of the incremental cost of a high performance school, increase the base State contribution for a qualified project between 2 and 9 percent. The incentive, which is based on CHPS, incrementally increases with each additional point earned over the minimum.

- Savings By Design: This energy efficiency incentive and technical assistance program is offered by all California investor owned utilities. For LAUSD, the program is available from Southern California Edison in its service territory, i.e., outside the city of Los Angeles. Through this program, LAUSD has earned approximately \$1 million. A revised Savings By Design program is currently being finalized for calendar years 2009 through 2011.
- LADWP Energy & Water Efficiency Programs: The District is meeting with the Los Angeles Department of Water and Power on a regular basis to ensure that LAUSD is able to fully utilize all LADWP energy and water efficiency programs. LADWP's programs include financial incentives and alternate sources of supply such as reclaimed water. For example, LAUSD new schools will apply for LADWP's New Construction Energy Efficiency Grants as projects are completed, as required by the program. These grants, which will be based on each project's energy efficiency level, are projected to average approximately \$150,000 per school. Water efficiency rebates will be utilized to support various water conservation initiatives including smart irrigation controllers, cooling tower conductivity controls, and the installation of water efficient restroom fixtures such as high efficiency urinals and low flow toilets into existing schools (details below).
- MWD: The Metropolitan Water District provides rebates for water efficiency strategies throughout southern California. LAUSD works directly with MWD whenever the local water retailer does not support the rebate program.

- High Performance Standards, Research & Construction Protocols: The District continues to integrate high performance concepts into the Design Guide and Guide Specifications; undertake related research; and establish implementation protocols. The 2008 accomplishments included:

- Construction Protocol: The District's CHPS construction oversight and outreach program is designed to ensure that specified high performance strategies are fully implemented. Four reviews of each project are being conducted during construction, with the focus on construction and demolition waste recycling, low emitting and recycled content materials, storm water management, and acoustics.
- Storm Water Management: The District continues to design and implement storm water management strategies for all Phase II, III and IV schools as well as numerous Phase I sites. Many of these projects will include an educational component located in the school library. As required by the State Water Quality Control Board, LAUSD's expanded stormwater technical manual will be finalized by June 2009. It will cover system design and maintenance and operations, and will identify District staff training needs. A draft will be made available for public review.
- Water Efficiency: The District conducted a study to determine the most effective strategy to increase the water efficiency of school bathrooms, including through the use of high efficiency urinals. The conclusion was to install high efficiency toilets, urinals and faucets whenever bathrooms are modernized. In addition, water free urinals are being installed in all new schools. Other water efficiency goals include maximizing incentives and installing smart irrigation systems, as well as identifying funds to modernize existing irrigation systems that are outdated or leak. Reclaimed water is currently used for landscaping at select campuses where it is available through municipal pipes. CRES #22, a new elementary school in west Los Angeles, will be the first LAUSD campus to also use reclaimed water for interior, non-potable uses such as toilets.
- Instructional Gardens: All new school projects are being reviewed before bidding to determine if the budget and schedule permit converting a portion of the open space into an instructional garden. For the first time, CHPS 2009, thanks in part to LAUSD's effort, includes an instructional garden credit.
- Energy Efficiency: The District has developed data on the relative energy performance of all LAUSD campuses. This data has been used to identify the least efficient schools so that they can be prioritized for aggressive energy conservation measures including retrofits of high energy use systems.

Energy management systems (EMS), which help automate and monitor energy systems, are being adopted as a standard for new schools and will be installed on those existing schools where it is cost effective.

LAUSD's Phase II new schools, on average, are 30 percent more energy efficient than required by California's Title 24 2002 energy efficiency standards. Phase III and IV new schools average 27 percent under Title 24 2005, which requires a higher level of energy efficiency than Title 24 2002. The resultant operating cost savings will benefit these schools throughout

their lives.

- Renewable Energy: LAUSD has established a goal of installing a minimum of 50 megawatts (MW) of photovoltaic (solar electricity) systems by the end of the 2012 school year. The District surveyed over 100 schools and other facilities to identify the most appropriate sites. A 1 MW solar system was completed in 2008 on the District's Pico Rivera warehouse; the next phase will include 3 to 7 additional MW on 7 schools, including Polytechnical and Banning High Schools, and 1 District support site. The systems are being funded by outside investors through private placement agreements, by incentives or by a settle agreement reached with LADWP.

Phase III and IV new schools are being designed to enable them to readily incorporate future photovoltaic systems. During design, the focus is on maximizing the amount of open roof that can accommodate solar systems and ensuring that roofs can support these systems' weight. The goal is to design each new school so that renewable energy can to supply 30 percent of its energy consumption.

- Commissioning: As required by CHPS, all new CHPS 2006 schools are being commissioned. Commissioning is a quality control process that ensures that each school's energy consuming systems function as planned. The District's new commissioning specification sections have been posted on LAUSD's website.
- Green Materials: Twelve LAUSD specifications have been revised to incorporate the CHPS low emitting and recycled content criteria. To earn the maximum number of CHPS low emitting materials points, a project must use qualifying materials from eight different categories (each category is worth one-half point). To date, LAUSD has only been able to locate acceptable materials in five of the eight categories, including furniture. CHPS is currently expanding the CHPS materials database (which LAUSD initiated) and is expected to identify additional compliant materials. The District will examine these materials for their applicability to LAUSD schools.
- Training: During 2008, staff and consultant training included energy management systems, BIM (building information management) systems, commissioning and CHPS 2009.
- Outreach: During 2008, LAUSD continued to educate stakeholders and the community on the High Performance Schools Program. For example, LAUSD presented papers on the Program at the California Green Schools Summit, Greentools (the annual CHPS conference), Greenbuild (the US Green Building Council's annual convention; the USGBC developed LEED), the CASH annual meeting, and the US Green Building Council Los Angeles Chapter's Municipal Green Building Conference. A critical part of the developing sustainability

program is site level engagement with staff, students and parents.

- High Performance Schools Working Group: The LAUSD High Performance Schools Working Group continues to meet quarterly. The meetings feature status reports on LAUSD's high performance school program and related initiatives; CHPS and incentive program updates; and special presentations. The 2009 meetings are scheduled for March 13, June 12, September 11 and December 11.

### III. CHALLENGES

- Maintaining High Performance Benefits: High performance strategies such as energy and water efficiency require ongoing maintenance to retain the benefits, whether installed in new or existing schools. The challenges include monitoring performance; re-commissioning (retesting systems to determine their performance); keeping current with new technology; training District staff; and dedicating funds. This is particularly challenging given the current budget shortfall. The District needs to develop a long range plan, including funding, to ensure that high performance benefits are retained over time.
- Adopting New Technologies: One result of the rapid expansion of the green building market is the ongoing development of new priorities, strategies, regulations and technologies that cover a range of topics including energy and water efficiency; alternate and renewable sources of energy and water; storm water management; and green materials. The District has historically been cautious about adopting new concepts until they can be proven to meet LAUSD's criteria. The District needs to find a balance between insuring that new products and design strategies meet the challenging environment of schools and capturing the benefits as quickly and efficiently as possible.
- Incorporating High Performance Criteria into Existing Schools: For most of the High Performance School Initiative's history, the focus has been on new schools. The District needs to develop procedures and programs to ensure that high performance strategies are fully integrated into existing schools wherever appropriate.
- Portables: CHPS is currently finalizing the revision of its high performance portable classroom criteria. LAUSD currently purchases new portables for both new and existing schools. However, the portable classroom manufacturing industry does not typically offer high performance units because of the lack of demand. The District can help change this situation by incorporating the CHPS criteria into LAUSD's request for proposal and ordering high performance units.