

Understanding Green Building Program Options for Schools CHPS® Criteria & LEED® for Schools

This paper is written in response to a growing demand for answers to a common question in the school construction community: When building a green school, should I use the CHPS Criteria or LEED for Schools?

To begin, the Collaborative for High Performance Schools (CHPS®) must first acknowledge that so long as an ever increasing number of schools being built and modernized are healthy, high performance, green, sustainable learning environments for children, then both the CHPS and USGBC programs are successful. However, CHPS recognizes that although both rating systems have similar intents, the CHPS Criteria and LEED are structurally, philosophically, and programmatically different, and that school districts, faced with both financial and time constraints, must make a choice between the two programs. When making this choice, school districts must consider ease of certification, recognition, cost, experience, flexibility, transparency, scope, and climate sensitivity, to name a few.

This paper addresses these considerations and also provides a historic thread that will help put these two rating systems into perspective.

A Historical Perspective of the CHPS Criteria and LEED for Schools

In 1993, the U.S. Green Building Council (USGBC) was established with the purpose of “fulfilling the building and construction industry’s vision for its own transformation to high-performance green building.” The USGBC developed LEED® (Leadership in Energy and Environmental Design), a green building rating system as a transformation tool to support their mission. The first product from LEED®, LEED for New Construction (LEED-NC) was launched in 1998 and publicly released for use in 2000.

In November 1999, the California Energy Commission called together Pacific Gas and Electric Company, San Diego Gas and Electric, and Southern California Edison to discuss the best way to improve the energy performance of California’s schools. The Collaborative for High Performance Schools, Inc. (CHPS), a non-profit, formed out of this partnership to specifically address California K-12 schools, and over the years has expanded beyond energy efficiency to address an array of issues that make up healthy and environmentally conscious school environments throughout the United States.

CHPS California was developed with the knowledge and support of the USGBC. In CHPS’ early years, USGBC did not have a rating system for schools and were intending to apply LEED-NC to all building types. CHPS California’s leadership met in 2001 with Christine Ervine, then Executive Director of USGBC, to explore the possibility of a LEED for Schools type of program. At that time it was conveyed that it was USGBC’s policy not to develop building-specific rating systems. CHPS indicated that its intention was to develop a system for California K-12 schools and the message from Ms. Ervine in so many words was “go for it”. Therefore, in 2001 CHPS released its Best Practices Manual for designing, constructing and operating green schools. Volume III of the Best Practices Manual included a green building rating program for schools, the CHPS Criteria.

There were a number of reasons CHPS did not want to adopt LEED-NC and felt the need for both a California and schools specific rating program:

- California was and is still in the midst of a massive program to build new schools and modernize old ones.

- The LEED rating system did not address many issues critical to high performance schools such as acoustics, daylighting, electric lighting, low-emitting materials, joint use of facilities, etc.
- California regulations and statutes (especially with regard to energy and stormwater) are more stringent than national standards referenced in LEED. In some cases minimum compliance with California codes and regulations achieved LEED points; CHPS felt that a true high performance school must be asked to go above and beyond minimum compliance.
- The school design and construction community in California could not afford the time and expense to go through the LEED certification process and an easier approach was needed.
- LEED was/is targeted for the top 25% of the nation's buildings (the leaders). The California community wanted a standard that would apply to all schools.
- The process for plan reviews and funding of California K-12 schools is unique and a rating system was needed that respects this process and provides appropriate leverage at the key pressure points.

After the first few years of operation CHPS gained the attention of state agencies and organizations across the nation. Starting in 2004, states including Massachusetts, New York, Washington, New Hampshire, Maine, Rhode Island, Vermont and Connecticut (now referred to as CHPS National states) saw the value in state and regional standards that address issues specific to schools and that are more flexible based on state and regional conditions. CHPS National is scheduled to launch in Summer 2008.

After the demonstrated success of the CHPS Criteria as well as other building specific rating programs such as the Green Guide for Health Care (GGHC), in 2004 the USGBC changed its policy and allowed for the creation of "Application Guides" tailored to specific building types. They began development on application guides for laboratories, homes, hospitals, schools and retail. It is unclear exactly why USGBC decided to change its policy on development of building specific rating systems; however like CHPS, USGBC probably realized the uniqueness of different building functions and a need to address different uses.

Soon after state adaptations of CHPS started to develop in various states, USGBC in late 2004 developed the Application Guide for Schools (AGS) committee, which included CHPS staff and technical committee representation as well as others from across the nation. Direction to the AGS from the LEED steering committee changed frequently for the first year or so and included the following:

- LEED-NC credits or points may not be changed, they may only be "interpreted" for schools.
- The LEED-NC credits may not be changed, but up to 6 additional points may be added for one or more new credits to deal with the specific requirements of schools.
- Any number of additional points and credits may be added and existing LEED credits may be modified.

After months of debate it was determined that the USGBC would create a LEED for Schools rating program as opposed to an application guide. CHPS staff and technical committee were involved with the development of LEED for Schools and portions of the CHPS Criteria were adopted for the LEED for Schools rating system; in particular the daylighting, electric lighting, joint-use, acoustics and low-emitting materials credits.

Choosing between the CHPS Criteria and LEED

The 2006 Edition CHPS Criteria and LEED for Schools are very similar in structure; however, distinctive characteristics between the two programs still remain. School districts should consider carefully in choosing between them, particularly if they are in a CHPS National state. School districts that are focusing on the public recognition aspect of building a green school may be interested in the brand recognition that comes with LEED status. However, school districts face very real costs, state regulations, and local limitations that may override public relations concerns.

Programmatic Considerations

Both CHPS and USGBC offer organizational support to supplement their green rating systems. This is an analysis of the similarities and differences between the two programs.

Similarities:

- Both programs are developed by technical committees with broad representation through a consensus, public review process.
- Both require that project claim at least 2 points from the Energy category. (2001 CHPS policy and 2007 USGBC policy.)
- Both offer 3rd Party verification / certification for compliance with programs requirements. (2000 USGBC policy and 2007 CHPS policy.)
- Both offer recognition.
- Both offer professional training and education on their programs.
- Both offer membership to their respective organizations.

Differences:

- CHPS specifically addresses school modernizations with separate thresholds and applicability, which are a large share of the California schools funding program.
- CHPS has a specific program for addressing classroom relocatables.
- The USGBC's goal is to "transform the building marketplace to sustainability" by targeting its standards at the top 25% of buildings. CHPS' goal is to create a "new generation of green, healthy schools" by targeting all schools.
- CHPS offers both 3rd Party Verification (CHPS Verified) and Self-Certification (CHPS Designed) for school districts with varying financial and compliance needs. Costs for verification are minimal and districts can standardize credits to decrease fees district wide.
- The CHPS implementation approach works at the district level, to holistically integrate high performance standards into multiple school campuses.
- The CHPS Best Practices Manual is available for FREE download.
- USGBC offers professional accreditation (LEED AP). An individual can take an exam on the LEED rating system and on other green building issues to achieve accreditation.
- All of CHPS' resources, trainings and research are school-focused, whereas USGBC covers all building types.
- CHPS references state codes whereas USGBC references national codes.

Rating Systems Considerations

The CHPS Criteria and LEED for Schools credit and point structures differ in some areas as well as the minimum requirements for participation. In trying to make comparisons for meeting CHPS minimum threshold (32 points and all prerequisites) and LEED for Schools (29 points and all prerequisites) it is clear that at the minimum level for participation the CHPS Criteria is more stringent. For one, the CHPS Criteria has more prerequisites than LEED for Schools. The CHPS Criteria has 11, while LEED has 9, and one of LEED's is already a CA state requirement and is not included in CHPS' rating system (LEED's EQ P2 ETS). Additional prerequisites that CHPS schools must comply with include:

- Minimum requirements for construction waste management (ME2.0). LEED offers points for this but does not require a minimum.
- Minimum requirements for using the school as a teaching tool (CHPS SS6.0).

- Calculating the schools annual water budget in accordance with local and state ordinances (WE1.0).
- In many comparisons it has been shown that minimum compliance with California's Title 24 is equivalent to compliance with ASHRAE 90.1, and the CHPS Criteria require that projects go beyond Title 24 by 10% as a prerequisite.
- The CHPS Criteria minimum requirements for indoor air quality, EQ2.0 far exceed LEED's requirements for EQ P1. Many of the requirements of EQ2.0 in the CHPS Criteria are included in LEED, but offered as points. This includes 5 separate LEED points.
- ASHRAE 55 Code Compliance is required in the CHPS Criteria and is given a point in LEED EQ C7.1.

A project that scores the minimum number of CHPS points is not equivalent to a minimum scoring LEED project. A brief analysis of the CHPS and LEED point systems reveals that the CHPS' Criteria are more stringent than LEED at the minimum certification levels. When a CHPS school meets all of CHPS' prerequisites, it has met all of LEED's prerequisites. However, by merely meeting four out of the eleven CHPS prerequisites (EQ2.0, EQ4.0, ME2.0 and EE1.0), a project will have earned at least 7 additional points under LEED for Schools. Thus, a school that earns the minimum point requirements for CHPS (32 points) would most likely earn a LEED for Schools Silver certification (approximately 37 to 40 points). Conversely, a project that qualified for LEED's minimum certifications (a LEED for Schools Certified School) would most likely not earn CHPS certification.

For a detailed comparison of the two rating systems please see Appendix A. Highlighted in yellow are credits that both LEED and CHPS offer. For most of these credits, both CHPS and LEED offer the same number of points per credit. However, CHPS offers more points for superior energy performance (EE1.1), daylighting (EQ1.1) and improved acoustics (EQ3.0). CHPS created this point structure after determining that these credits are some of the hardest, yet most important, for school districts to achieve. The structure rewards those school districts that choose to invest in these significant high performance features.

Other Rating Systems Differences:

- The CHPS Criteria takes into consideration state / regional climate variations and state regulation and codes.
- The CHPS 2006 Edition Criteria more directly supports modernization projects, through adjusting the point thresholds and prerequisites based on the scope of the project. In addition, CHPS offers different applicability based on this project type.
- The CHPS Criteria rewards school districts for making long-term, ongoing policy and operations decisions that add to the health of children and the environment.
- The CHPS Criteria has 11 credits that LEED does not have and LEED has 7 credits that the CHPS Criteria does not have.

Parties interested in green school building should keep abreast of the 2009 Edition of the CHPS Criteria currently being developed, and the future plans for LEED 3.0 and LEED for Schools. All are invited to participate in the respective public reviews as these two systems further expand and develop.

APPENDIX A – COMPARISON BETWEEN CHPS Criteria and LEED for Schools

About the Table: The table is not a perfect comparison of the two systems, since, although some credits have the same intent, their exact requirements and approaches may differ. Some of these credits are identified with a “*” after in the LEED for Schools column. The table was developed by first listing all of the CHPS Criteria credits and then listing the LEED for School credits in association with a corresponding CHPS credit or category. Some credits that are in one category for the CHPS Criteria, are in a different category for LEED for Schools, so, for example, a Site credit in LEED is listed under Policy and Operations for CHPS. In addition, under LEED there are a few credits where 2-3 credits are the same as 1 of CHPS credits; this is noted in the LEED for Schools Column (for example, SS1.1 reads “also see CHPS SS1.2”). All CHPS and LEED for Schools credits are listed in the table. Green highlights the prerequisites the two systems have in common and yellow highlights the credits the two systems have in common.

	CHPS (2006 Edition Criteria) Possible Points: 85 Prerequisites: 11 32 Points Required New Schools 25 Points Required Major Modernizations 25 Points Required New Buildings * Schools are recognized for achieving higher point totals, but no specific levels of achievement identified (i.e. Gold)		LEED for Schools Possible Points: 79 Prerequisites: 9 29 Points Required for Certification 37 Points Required for Silver 44 Points Required for Gold 58 Points Required for Platinum	
MAIN CATEGORY	CREDIT TITLE	POINTS/PR	CREDIT TITLE	POINTS/PR
SUSTAINABLE SITES	15 Points 3 Prerequisites			
	SS1.0 CA Code Compliance	PR	SS P2 Environmental Site Assessment	PR
	SS1.1 Environmentally Sensitive Land	1	SS C1 Site Selection	1
			SS C5.1 Protect and Restore Habitat (also see CHPS SS1.2)	1
	SS1.2 Greenfields	1	SS C5.1 Protect and Restore Habitat (also see CHPS SS1.1)*	1
	SS1.3 Central Location	1	SS C2 Development Density & Community Connectivity*	1
	SS1.4 Joint Use of Facilities	1	SS C10 Joint Use of Facilities (also see CHPS SS1.5)	1
	SS1.5 Joint Use of Parks	1	SS C10 Joint Use of Facilities (also see CHPS SS1.4)	1
	SS1.6 Reduced Footprint	1	SS C5.2 Maximize Open Space	1
	SS2.1 Public Transportation	1	SS C4.1 Public Transportation Access	1
	SS2.2 Bicycles	1	SS C4.2 Bicycle Use	1
	SS2.3 Minimize Parking	1	SS C4.3 Low Emitting & Fuel Efficient Vehicles (also see CHPS PO2.2)	1
			SS C4.4 Parking Capacity	1
	SS3.0 Construction Site Runoff Control	PR	SS P1 Construction Activity Pollution Prevention	PR
	SS3.1 Limit Stormwater Runoff	1	SS C6.1 Quantity Control	1
	SS3.2 Treat Stormwater Runoff	1	SS C6.2 Quality Control	1
	SS4.1 Reduce Heat Islands- Landscaping	1	SS C7.1 Heat Island- Non Roof	1
	SS4.2 Reduce Heat Islands- Cool Roofs	1	SS C7.2 Heat Island- Roof	1
	SS5.1 Light Pollution Reduction	1	SS C8 Light Pollution Reduction	1
	SS6.0 Educational Display	PR	-	-
	SS6.1 Demonstration Areas	1	-	-
	-	-	SS C3 Brownfield Redevelopment	1
	-	-	SS C9 Site Master Plan	1
WATER	5 Points 1 Prerequisite			
	WE1.0 Create Water Use Budget	PR	-	-
	WE1.1 Reduce Potable Water for Landscaping	1 or 2	WE C1.1 Water Efficient Landscaping	1
			WE C1.2 WEL- No Potable Water Use or No Irrigation	1
	WE2.1 Reduce Sewage Conveyance from Toilets	1	WE C2 Innovative Wastewater Technologies	1
	WE2.2 Reduce Indoor Potable Water Use	1 or 2	WE C3.1 Water Use Reduction 20%	1
			WE C3.2 Water Use Reduction 30% or 40%	1 or 2
	-	-	WE C4 Process Water Use Reduction	1
ENERGY	20 Points 2 Prerequisites			
	EE1.0 Minimum Energy Performance	PR	EA P2 Minimum Energy Performance*	PR
	EE1.1 Superior Energy Performance	1 to 13	EA C1 Optimize Energy Performance*	1 to 10
	EE1.2 Natural Ventilation	1	-	-
	EE1.3 Energy Management System	1	-	-
	EE2.1 Renewable Energy	1 to 3	EA C2 On-Site Renewable Energy	1 to 3
	EE3.0 Fundamental Building Systems Testing and Training	PR	EA P1 Fundamental Commissioning of the Building Energy Systems*	PR
	EE3.1 Enhance Commissioning	1 or 2	EA C3 Enhanced Commissioning	1
			EA C5 Measurement & Verification	1
	-	-	EA P3 Fundamental Refrigerant Management	PR
	-	-	EA C4 Enhanced Refrigerant Management	1

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MATERIALS	<i>12 Points 2 Prerequisites</i>		
	ME1.0 Storage & Collection of Recyclables	PR	MR P1 Storage & Collection of Recyclables PR
	ME2.0 Construction Waste Management	PR	-
	ME2.1 Construction Waste Management	1 or 2	MR C2 Construction Waste Management 1 or 2
	ME3.1 Reuse of Structure and Shell	1 or 2	MR C1.1 Building Reuse 75% 1 MR C1.2 Building Reuse 95% 1
	ME3.2 Building Reuse, Interior Non-structural	1	MR C1.3 Building Reuse 50% 1
	ME4.1 Recycled Content	1 or 2	MR C4 Recycled Content 1 or 2
	ME4.2 Rapidly Renewable Materials	1	MR C6 Rapidly Renewable Materials 1
	ME4.3 Organically Grown Materials	1	-
	ME4.4 Certified Wood	1	MR C7 Certified Wood 1
	ME4.5 Salvaged Materials	1 or 2	MR C3 Materials Reuse 1 or 2
	ME4.6 Alternative: EPP	1/2 to 7	-
	-	-	MR C5 Regional Materials 1 or 2
INDOOR ENVIRONMENTAL QUALITY	<i>20 Points 3 Prerequisites</i>		
	EQ1.1 Daylighting	1 to 4	EQ C8.1 Daylight & Views 1 or 2
	EQ1.2 View Windows	1	EQ C8.2 Daylight & Views 90% 1
	EQ1.3 Electric Lighting	1	EQ C6.1 Lighting System Design and Controllability (also see CHPS EQ4.1) 1
	EQ2.0 Minimum Requirements	PR	EQ P1 Minimum IAQ Performance PR EQ C3.1 Construction IAQ Management Plan 1 EQ C3.2 Construction IAQ Plan Before Occupancy 1 EQ C10 Mold Prevention 1 EQ C1 Outdoor Air Delivery 1 EQ C2 Increased Ventilation 1
	EQ2.1 Thermal Displacement Ventilation	2	-
	EQ2.2 Low-Emitting Materials	1/2 to 4	EQ C4 Low-Emitting Materials 1 to 4
	EQ2.3 Chemical and Pollutant Source Control	1	EQ C5 Indoor Chemical & Pollutant Source Control 1
	EQ2.4 Ducted Returns	1	-
	EQ2.5 Filtration	1	-
	EQ3.0 Minimum Acoustical Performance	PR	EQ P3 Minimum Acoustical Performance PR
	EQ3.1 Improved Acoustical Performance	1 or 3	EQ C9 Enhanced Acoustical Performance 1 or 2
	EQ4.0 ASHRAE 55 Code Compliance	PR	EQ C7.1 Thermal Comfort Design 1
	EQ4.1 Controlability of Systems	1 to 2	EQ C6.1 Lighting System Design and Controllability (also see CHPS EQ1.3) 1 EQ C6.2 Thermal Comfort Controllability 1
	CA - State Law (No Req for CHPS)	-	EQ P2 Environmental Tobacco Smoke (ETS) Control PR
	-	-	EQ7.2 Thermal Comfort Verification 1
POLICY & OPERATIONS	<i>13 Points</i>		
	PO1.1 CHPS Resolution	1	-
	PO1.2 Environmental Education Resolution	1 or 2	ID C3 The School as a Teaching Tool* 1
	PO1.3 Periodic Assessment of Environmental Conditions	1	-
	PO1.4 Equipment Performance	1 or 2	-
	PO2.1 Buses	1	-
	PO2.2 Low Emission School Buses	1	SS C4.3 Low Emitting & Fuel Efficient Vehicles (also see CHPS SS2.3) 1
	PO3.1 Maintenance Plan	1 or 3	ID C1 Low Impact Cleaning & Maintenance Equipment Policy* 1
	PO3.2 Green Power	1	EA C6 Green Power 1
OTHER			
	-	-	ID C1-1.4 Innovation in Design 1 to 4
	-	-	ID C2 LEED AP 1

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