

PHYSICAL IMPROVEMENT
COST EFFORT TIME PAYBACK

BEHAVIORAL CHANGE
COST EFFORT TIME



LANDSCAPING (continued)		PHYSICAL IMPROVEMENT				BEHAVIORAL CHANGE		
		COST	EFFORT	TIME	PAYBACK	COST	EFFORT	TIME
72	Plant trees to shade south and west walls of buildings and to shade parking lots.	\$\$\$\$		●	▬			
73	Reduce urban heat island effect by creating shade over paved surfaces.	\$\$\$\$		●	▬			
74	Preserve and restore riparian and wetland buffers.	\$\$\$\$		●	▬			
BUILDING REUSE								
75	Recycle demolition and construction waste.	zero		●	▬			
76	Use construction materials that are manufactured within 500 miles of the construction activity.					zero		●
77	Use construction materials that contain recycled materials such as glass, concrete, wood, carpet, ceiling tiles and steel.					zero		●
78	Use 50% wood-based products that are certified in accordance with the Forest Stewardship Council's Principles and Criteria, for wood building components.					\$\$\$\$		●
79	Use rapidly renewable materials such as bamboo, cork, wool, wheat board, and cotton.					\$\$\$\$		●
80	Reuse building materials and products in order to reduce the demand for virgin materials and reduce waste.					\$\$\$\$		●
81	Reuse existing and previously occupied buildings maintaining at least 75% of the structure (based on surface area) including roof and walls.					\$\$\$\$		●

KEY

COST
zero
\$\$\$\$
\$\$\$\$
\$\$\$\$
\$\$\$\$

EFFORT
|||| in-house
|||| consultant assistance
|||| technical consultant required

TIME
● 0-1 years
● 1-5 years
● 6-10 years

PAYBACK
▬ 1-5 year payback
▬ 6-10 year payback

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RESOURCE LIST

US Green Building Council – Leadership in Energy and Environmental Design (LEED) for Schools for New Construction and Major Renovations (2007) http://www.usgbc.org/ShowFile.aspx?DocumentID=2593	Commercial Green Buildings Checklist – Tenant Improvements, City of Scottsdale (2009) http://scottsdaleaz.gov/Assets/documents/greenbuilding/commGBchecklist.pdf
US Green Building Council – Leadership in Energy and Environmental Design (LEED) New Construction program, LEED NCv2.2 (2008) http://www.usgbc.org/ShowFile.aspx?DocumentID=5546	Checklist for Environmentally Responsible Design and Construction (2009) http://www.BuildingGreen.com/ebn/checklist.cfm
Los Angeles Community College District – Sustainable Design Standards (2009) By Glumac International	The Sustainable Sites Initiative – American Society of Landscape Architects – Draft 2008 – Guidelines and Performance Bench Marks http://www.sustainablesites.org/report
High Performance School Buildings – Resource and Strategy Guide (2001) By the Sustainable Buildings Industry Council	http://www.sbicouncil.org/displaycommon.cfm?an=1&subarticlenbr=115
Green Buildings Checklist: Environmental Actions for Schools to Consider, Illinois Environmental Protect Agency, (2003) http://www.epa.state.il.us/p2/green-schools-checklist.pdf	http://www.buildgreenschools.org/
Kentucky Green & Healthy Schools – Energy Inventory Teacher Reference, Kentucky Green & Healthy Schools Program, (2008) http://www.greenschools.ky.gov/ (click on the Inventories button on the top of the page)	Oregon Green School Tools http://www.deq.state.or.us/lq/pubs/sw/OregonGreenSchoolTools.pdf

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SUSTAINABILITY MATRIX

"Problems cannot be solved at the same level of awareness that created them."
Albert Einstein

NAME _____
SCHOOL _____ DATE _____

ADMINISTRATION

	PHYSICAL IMPROVEMENT				BEHAVIORAL CHANGE		
	COST	EFFORT	TIME	PAYBACK	COST	EFFORT	TIME
1					zero		●
2					zero		●
3	\$\$\$\$		●		\$\$\$\$		●
4	\$\$\$\$		●		\$\$\$\$		●

ELECTRICAL

5					zero		●
6					zero		●
7					zero		●
8					zero		●
9					zero		●
10	\$\$\$\$		●	▬			
11	\$\$\$\$		●	▬			
12	\$\$\$\$		●	▬			
13	\$\$\$\$		●	▬			
14	\$\$\$\$		●	▬			
15					\$\$\$\$		●
16	\$\$\$\$		●	▬			
17	\$\$\$\$		●	▬			
18	\$\$\$\$		●	▬			
19	\$\$\$\$		●	▬			
20					\$\$\$\$		●

KEY

COST
zero
\$\$\$\$
\$\$\$\$
\$\$\$\$
\$\$\$\$

EFFORT
|||| in-house
|||| consultant assistance
|||| technical consultant required

TIME
● 0-1 years
● 1-5 years
● 6-10 years

PAYBACK
▬ 1-5 year payback
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BEHAVIORAL CHANGE
COST EFFORT TIME ✓

ELECTRICAL (continued)

21	At kitchens, use controls on exhaust fans that regulate the amount of air being exhausted based on factors such as temperature, heat & smoke.					\$\$\$\$	■	●	▨
22	Install daylight responsive controls within 20 feet of windows that turn lights off when the natural light provides adequate.	\$\$\$\$	■	●	▨				
23	Replace doors and windows that are damaged or need double pane windows to reduce thermal losses or gains.	\$\$\$\$	■	●	▨				
24	Install solar panels.	\$\$\$\$	■	●	▨				

MECHANICAL

25	Calibrate and balance all air conditioning and heating systems regularly.	\$\$\$\$	■	●	▨				
26	Locate outside air intakes on the north side or other shaded sides of buildings to take advantage of cool shaded air.	\$\$\$\$	■	●	▨				
27	Use variable frequency drives (VFD) on water pumps and air distribution systems.	\$\$\$\$	■	●	▨				
28	Install mechanical ventilation equipment to improve indoor air quality by introducing fresh air into school facilities.	\$\$\$\$	■	●	▨				
29	Provide air-side economizers on all cooling equipment including air handlers, packaged rooftop units and dedicated cooling units for electrical rooms and server rooms.	\$\$\$\$	■	●	▨				
30	Replace old boilers with low energy consuming models.	\$\$\$\$	■	●	▨				

WATER

31	Install drip irrigation and drought tolerant plants.	\$\$\$\$	■	●	▨				
32	Use low water volume dishwashers and clothes washers and high efficiency ice makers.	\$\$\$\$	■	●	▨				
33	Create vegetated swales to slow down run-off and add water to the water table.	\$\$\$\$	■	●	▨				
34	Install low flow toilets	\$\$\$\$	■	●	▨				
35	Reduce the amount of impervious surfaces such as paving and walkways to reduce run-off and allow water to soak into the ground.	\$\$\$\$	■	●	▨				
36	Use only captured rainwater, recycled wastewater, recycled grey water or water treated and conveyed by a public agency specifically for non-potable uses for irrigation.	\$\$\$\$	■	●	▨				
37	Install submeters to major buildings to monitor efficiency and identify leaks.	\$\$\$\$	■	●	▨				

PHYSICAL WASTE

38	Print on both sides of paper					zero	■	●	
39	Use recycled content materials including carpet, gypsum board, wood and doors.					zero	■	●	
40	Encourage practices by staff, faculty and students to reduce the use of paper such as printing on both sides of a sheet of paper, reading documents on computer screens rather than printing them out and reusing paper that is clean on one side for in-house drafts and memo pads.					zero	■	●	
41	Implement a construction waste reduction/reuse program requiring construction waste to be separated and recycled (e.g. concrete, wood, glass, metal and carpet).					zero	■	●	
42	Encourage the use of salvaged, refurbished and reused products in all construction and renovation projects.					zero	■	●	

KEY

COST	EFFORT	TIME	PAYBACK
zero	■ in-house	● 0-1 years	▨ 1-5 year payback
\$\$\$\$	■ consultant assistance	● 1-5 years	▨ 6-10 year payback
\$\$\$\$	■ technical consultant required	● 6-10 years	



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PHYSICAL WASTE (continued)

43	Recycle items such as paper, aluminum cans, cardboard and plastic.					\$\$\$\$	■	●	
44	Re-use cardboard boxes, manila envelopes and file folders.					\$\$\$\$	■	●	
45	Recycle glass, plastic, paper, cardboard and organic waste.					\$\$\$\$	■	●	

ROOFING

46	Install reflective white roofing	\$\$\$\$	■	●	▨				
47	Install thermal insulation in walls and roofs.	\$\$\$\$	■	●	▨				
48	Install green roofs.	\$\$\$\$	■	●	▨				

INDOOR AIR QUALITY

49	Reduce use of toxic pest control chemicals					zero	■	●	
50	Replace toxic cleaners and other maintenance supplies with low VOC (volatile omitting compounds) emitters of potential indoor air contaminants.					zero	■	●	
51	Avoid wood products and furnishings that use large amounts of formaldehyde as a bonding agent.					zero	■	●	
52	Ensure that mechanical rooms are free from trash and chemicals that could get into the air supply system.					zero	■	●	
53	Do not use ozone depleting chemicals in refrigeration, air conditioners or fire suppression systems.					zero	■	●	
54	Prohibit smoking within buildings or outside within 25 feet of entry ways, air intakes or operable windows					zero	■	●	
55	Designate smoking areas away from concentrations of building occupants or pedestrian traffic					zero	■	●	
56	Clean HVAC air filters regularly	\$\$\$\$	■	●	▨				
57	Vent showers and other moisture generating sources to the outside.	\$\$\$\$	■	●	▨				
58	Use low VOC emitting carpet and carpet adhesives that minimize off-gassing during construction.	\$\$\$\$	■	●	▨				
59	Use metal grates or mats at entrances to buildings that will trap dirt and keep it from being tracked into buildings.	\$\$\$\$	■	●	▨				

TRANSPORTATION

60	Provide secure bicycle parking to encourage bike use.	\$\$\$\$	■	●	▨				
61	Provide preferred parking for energy efficient vehicles and for van and car pool vehicles.	\$\$\$\$	■	●	▨				
62	Purchase fuel efficient and low emitting vehicles and equipment.	\$\$\$\$	■	●	▨				
63	Develop and implement a plan for buses and maintenance vehicles serving the school to use 20% natural gas, propane, biodiesel or low-emitting fuel efficiency vehicles.	\$\$\$\$	■	●	▨				

LANDSCAPING

64	Use minimum amounts of fertilizers and pesticides.					zero	■	●	
65	Recycle organic matter that is generated during site operations and maintenance.					zero	■	●	
66	Use mulching mowers.	\$\$\$\$	■	●	▨				
67	Use noninvasive plants.	\$\$\$\$	■	●	▨				
68	Use salvaged and recycled content materials.	\$\$\$\$	■	●	▨				
69	Use products that are designed for reuse and recycling.	\$\$\$\$	■	●	▨				
70	Use low flow irrigation such as drip systems.	\$\$\$\$	■	●	▨				
71	Use native and drought tolerant plants	\$\$\$\$	■	●	▨				

KEY

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zero	■ in-house	● 0-1 years	▨ 1-5 year payback
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\$\$\$\$	■ technical consultant required	● 6-10 years	



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