

The College School should be recognized as a Green Ribbon School for the significant commitment it has made by implementing sustainability in both the education of its students in pre-K to 8th grade and in the operation of the school. The College School has been an integral leader in design, development and construction of sustainable site improvements, has used a sustainable education building as a learning laboratory and has successfully trained, instructed and shared the practical implementation of sustainable site improvements to further sustainable practices.

The College School has made significant achievements and its facility and grounds truly reflect and exemplify the school's long-time ethic of environmental stewardship. The school has substantially transformed the built environment through various efforts since 2004. A building that was not energy efficient was demolished, asphalt parking lots were replaced with permeable pavers and white concrete, several landscaping projects have reduced storm water run-off, our dining hall has been transformed totally, including added windows for day lighting and using sustainable materials. Additional usable square footage was obtained within the existing building footprint by digging out an area within the original foundation, significant enhancements to environmental education have been experienced through the addition of the greenhouse and the resource commitment of a teacher's time to develop new educational projects including growing of vegetables and native plants, the installation of a student-led and partially student-funded project to select a wind turbine culminated in the installation of a vertical-axis wind turbine next to the greenhouse, grants received and projects accomplished in the adjacent city park and several neighboring businesses to remove invasive honeysuckle. Certainly, anyone familiar with the area that drives past our school has noticed the significant transformation in the built-environment.

Education for sustainability inspires our students to think about the world, their relationship to it, and their ability to influence it in an entirely new way. Education for sustainability leads children to understand the interconnectedness of humans, the economy, and all of the Earth's systems as well as the important role they play in creating a sustainable future. Education for sustainability prepares our students to be informed and responsible stewards of our future world. We believe in education for sustainability. Along with our roots and history in this belief, our faculty has recently worked together to discuss how sustainability issues can and should be taught in the TCS curriculum and community.

Whether in our greenhouse and garden, our biological sciences curriculum, our wilderness adventure education trips, our recycling efforts, our green construction, or our school wide Leave No Trace Ethic, sustainability and green education lives throughout our school. As educators we are stewards of the next generation. At this point in history, we are also stewards of 21st century schools that must cultivate the best of human qualities in the most imaginative and productive learning communities so that we can invent a healthy, positive, regenerative future.

"The invaluable human experience that is so powerfully taught at The College School is truly magical. There is nothing I want more in life than for my future children to have at least a taste of what I was able to have as a child maturing and learning at The College School".- **Sarah, Class of '01, PhD Student at University of Oregon**

Sustainable Environment and Education Policy

May, 2008

We commit to act as stewards of the earth and its limited resources both in the operation of our school and the education of our students. We seek to inspire our students to appreciate and protect the diversity and beauty of the natural world as well as to understand our interdependence with the natural environment by adopting the following policy to be known as the Sustainable Environment and Education Policy.

In operating our school, we will strive to conserve energy and water; reduce effluents and waste; recycle; encourage the use of alternative transportation and locally produced food; and make choices in our capital expenditures and purchasing practices that have the most beneficial effect on the environment.

Our curriculum focuses on long term integrated themes. School wide, we cultivate shared leadership, model responsibility and develop skills that prepare students to be active, engaged and informed citizens. We value learning experiences that encourage students and teachers to understand the interconnectedness of humans and our environment. We provide opportunities for students to learn from multiple perspectives and we strive to cultivate a love and understanding of the places in which we live and study.

In our school community, students, teachers and parents will be encouraged to think, innovate, and collaborate to improve our school's commitment to a sustainable and healthy future.

"The Wilderness Experience and Field Ecology encouraged my burgeoning awareness of the natural world. Now, seven years later, I'm studying to be an environmental science major. This choice was more than a little bit inspired by extraordinary outdoor experiences at The College School, and the principles of environmental stewardship that I learned". – **Becca, Class of '04, Duke University Student**

PILLAR ONE: Net zero environmental impact

You can choose to demonstrate progress towards elimination of GHG emissions and waste as well as water and energy conservation by completing one or more of the questions below, or by other methods (see final question).

Element 1A: Zero greenhouse gas (GHG) emissions

ENERGY

A. If you have received EPA's ENERGY STAR certification, in what year was the certification earned:

B. If you have reduced your total non-transportation energy use (i.e., electricity and temperature control) from an initial baseline, please provide:

Percentage reduction:

Measurement unit used (kBtu/Square foot or kBtu/student):

Time period measured: from to

What documents can you provide to document this reduction (such as ENERGY STAR Portfolio Manager reports) if requested?

*Its should be noted that:

- The classroom lighting has been changed from T-20 lights to T-10 lights. This resulted in a 33% decrease of energy used in the classrooms. Actual reduction was 8 kilowatts per hour.
- Compact Fluorescent Lights (CFL's) are used throughout the school.
- A white roof was installed on the theatre building (2011) and the Pre School building (2012). This was done in to lower the temperature in the facilities and to conserve energy.
- Motion sensor lighting is used in the cafeteria bathrooms and the kitchen.

C. What percentage of your energy consumption is derived from:

On-site renewable energy generation:

Purchased renewable energy:

BUILDINGS

D. If you have constructed and/or renovated buildings in the past three years, what percentage of the building area meets Leadership in Energy and Environmental Design (LEED), Collaborative for High Performing Schools (CHPS), Green Globes or other standards?

What is the total constructed area?

What is the total renovated area?

Which certification (if any) did you receive and at what level (e.g. Silver, Gold, Platinum)?

*Please see attached LEED checklist. While no certification was received, the USGBC and its LEED rating system greatly influenced the construction and build out of the newer facilities.

E. What percentage of your total existing building area has achieved LEED Existing Buildings: Operation & Maintenance, CHPS Operations, Green Globes or other standards?

What is the total building area?

Which certification (if any) did you receive and at what level (e.g. Silver, Gold, Platinum)?

*Please see attached LEED checklist. While no certification was received, the USGBC and its LEED rating system greatly influenced the construction and build out.

F. If you reduce or offset the GHG emissions from building energy use, please provide:

Current Total GHG Emissions (MtCO₂e)

Baseline Total GHG Emissions (MtCO₂e)

Change from Baseline: GHG Emissions (MtCO₂e)

Time period: from to

Explain any offsets used?

G. Have you fully implemented the Facility Energy Assessment Matrix within EPA's Guidelines for Energy Management? Yes or No

Has the school building been assessed using the Federal Guiding Principles Checklist in Portfolio Manager? Yes or No

H. What percentage by cost of all your furniture purchases is certified under the Business and Institutional Furniture Manufacturers Association's "level" ecolabel?

I. Is an energy and water efficient product purchasing and procurement policy in place? Yes or No

J. Other indicators of your progress towards elimination of GHG emissions (describe in detail and include metrics if available):

- CFC free paint, onsite renewable energy, composting and recycling have all been implemented to reduce GHG emissions.
- A study by The College School's Sustainability Director, Tim Wood, showed that total trash and post consumer waste was cut by 50%. 70lbs of trash and food waste was being produced per day and this reduced to 35lbs per day after the composting and recycling program was implemented.
- Linoleum flooring used in the drama facility, gym and cafeteria.
- Cork flooring used in conference room.
- Recyclable carpet used in kindergarten room.
- 100% recycled "Eco Soft" toilet paper, multi fold towels and double ply towels are used throughout the school.

Element 1B: Improved water quality, efficiency, and conservation

Water use is a bigger issue in some regions of the country than others. Water should be conserved as much as possible and reused whenever possible, but a goal of zero use may not be realistic or even necessary in some areas.

A. If you can demonstrate reduced total water consumption intensity (measured in gal/square foot) from an initial baseline, please provide:

Percentage reduction:

Time period: from to

What documents will you provide to document this reduction (such as ENERGY STAR Portfolio Manager reports) if requested?

B. How often do you conduct audits of facilities and irrigation systems to ensure they are free of significant water leaks and to identify opportunities for savings?

The business manager and maintenance staff conduct facility audits once a month.

C. Describe how your site grading and your irrigation system and schedule is appropriate for your climate, soil conditions, plant materials, and climate, with an emphasis on water conservation:

The upper, semi permeable parking lot, drains into the native plants in the front of the school. Not only does it provide water to the plants, it reduces the volume of water that runs off into the sewers and surrounding creeks. There are no sprinklers used on the property.

D. Do **all** your outdoor landscapes consist of water-efficient or regionally appropriate (native species and /or adapted species) plant choices? Yes or No Yes

Describe:

80% of the planting beds on the school property consist of native Missouri plants.

E. Are alternative water sources (e.g., grey water) used before potable water for irrigation? Yes or No Yes

Describe:

Rainwater is collected in a grey, catch water system, which is collected from the drama building roof. It consists of ten 55-gallon barrels. This water is used to supply our river project that is on the property as well as the garden, which provides the students and faculty with food, throughout the seasons.

F. If drinking water is acquired from the school's own well, are your drinking water sources protected?

Yes or No N/A

Describe how they are protected:

G. Do you have a program to control lead in drinking water (including voluntary testing and implementation of measures to reduce lead exposure in drinking water) in place? Yes or No No

Describe:

H. Have you been cited within the past three years for failure to meet federal, state or local potable water quality standards? Yes or No No

I. Are all taps, faucets and fountains used for drinking and cooking cleaned on a regular basis to reduce possible bacterial and other contamination; and are faucet screens and aerators regularly cleaned to remove particulate lead deposits? Yes or No No

How often is such cleaning conducted?

J. Other ways you are working to improve water quality, efficiency, and conservation:

An additional grey, catch water system is currently being installed outside of the cafeteria and will be used to water plants on that side of the school.

GROUNDS

K. What percentage of your school grounds are devoted to ecologically or socially beneficial uses, including those that give consideration to native wildlife?

Describe:

In the fall of 2007—our third grade class, working with Litzinger Road Ecology Center, gathered native stream plants and stratified them to prepare them for spring planting. They were propagated in our greenhouse and then planted along the River our school environmental stream environment located on our upper school play area. In addition, students and staff participate in an aggressive invasive species removal plan.

Element 1C: Reduced waste production

WASTE

You can work towards elimination of all solid waste through increased, reduced consumption, reuse practices and recycling.

A. What percentage of waste is diverted from the landfill or incinerator by reuse, composting, and/or recycling? (total amount reused, composted or recycled)/(total amount reused, composted or recycled used + total sent to a landfill or incinerator)

B. What percentage of total office/classroom paper content by cost is post-consumer material or fiber from forests certified as responsibly managed by the Forest Stewardship Council, Sustainable Forestry Initiative, American Tree Farm System or other certification standard? (If a paper is only 30% recycled, only 30% of the cost of that paper should be counted towards the recycled portion)

C. What percentage of total office/classroom paper content by cost is "totally chlorine-free" (TCF) or "processed-chlorine-free" (PCF)?

HAZARDOUS WASTE

Please answer all the questions below if possible regarding elimination of hazardous waste streams.

D. How much hazardous waste do you generate (lbs/student/year)?

Describe the types of hazardous waste, how hazardous waste is monitored and how the amount above is calculated.

The only hazardous wastes produced by the school are computers and batteries. These are recycled through a school program in collaboration with Goodwill and The Funding Factory.

Please list each hazardous waste and the amount of each present at the end of the year.

- 10-15 computers are recycled per year
- Batteries (unknown amount)

E. Is a Hazardous Waste Policy for storage, management and disposal of chemicals in laboratories and other areas with hazardous waste in place and actively enforced? Yes or No

F. Have you been cited within three years for improper management of hazardous waste according to Federal and State regulations? Yes or No

G. What percentage of total computer purchases by cost are Electronic Product Environmental Assessment Tool (EPEAT) certified products:

How do you dispose of unwanted computer and other electronic products?

Computers, electronics and batteries are donated to Goodwill and The Funding Factory to be recycled. The College School allows students and parents to drop off unwanted electronics and batteries so that they can be recycled appropriately.

H. What percentage by cost of all cleaning products in use are certified "green," or can otherwise demonstrate that they meet the environmental standards of established eco-label programs?

Which standard(s) are you using?

Green cleaning products being used:

- Pure Green Solutions "San-A-Safe" hand sanitizer in bathrooms
- Green Seal Certified "Alpha HP" multi purpose cleaner used throughout the school

I. Is your custodial program based in the principles of effective management and "green" service? Yes or No

J. Has your custodial program been certified by the ISSA Cleaning Industry Management Standard - Green Building (or an equivalent standard)? Yes or No

K. Other indicators that you are reducing waste and eliminating hazardous waste:

Element 1D: Use of alternative transportation to, during and from school

A. What percentage of students walk, bike, bus, or carpool (2+ students in the car) to/from school?

Describe how this information been collected and calculated:

Currently, the Middle School's "Systems Thinking" class is conducting a survey to obtain this information.

B. Do you have a no-idling policy on file and signs posted stating that all vehicles, including school buses and other vehicles dropping off and picking up students, are prohibited from idling on school premises? Yes or No No

C. Are all vehicles loading & unloading areas at least 25 feet away from all buildings air intakes (including doors and windows)? Yes or No No

D. Describe how your school transportation use is efficient and environmentally benign (e.g. the percentage of school-owned electric/hybrid/alternative fuel vehicles in your fleet, or other indicators of significant reductions in emissions):

While no school owned vehicles meet the above criteria, there are five teachers who drive hybrid vehicles to school on a daily basis.

E. Have "Safe Pedestrian Routes" to school or "Safe Routes to School" been designated, distributed to parents and posted in the main office? Yes or No No

Describe any other accomplishments you've made under Pillar One towards eliminating your negative environmental impact or improving your environmental footprint which you feel should be considered:

*Please see Supporting Documents #1 for additional information.

PILLAR TWO: Net positive impact on student and staff health

Please answer all questions under Pillar Two

Element 2A: An integrated school environmental health program based on an operations and facility-wide environmental management system that considers student and staff health and safety in all practices related to design, construction, renovation, operations, and maintenance of schools and grounds.

INTEGRATED PEST MANAGEMENT

A. Do you have an integrated pest management plan in effect to reduce or eliminate pesticides? Yes or No Yes

B. Do you provide notification of your pest control policies, methods of application and requirements for posting and pre-notification to parents and school employees? Yes or No No

C. Do you maintain annual summaries of pesticide applications, copies of pesticide labels, copies of notices and MSDSs in an accessible location? Yes or No Yes

D. Do you prohibit children from entering the pesticide area for at least 8 hours following the application or longer, if feasible, or if required by the pesticide label? Yes or No Yes

VENTILATION

E. Does your school meet the stricter of: ASHRAE Standard 62.1-2010 (Ventilation for Acceptable Indoor Air Quality) OR your state or local code? Yes or No No

Which one?

F. Are local exhaust systems (including dust collection systems, paint booths, and/or fume hoods) installed at all major airborne contaminant sources, including science labs, copy/printing facilities, chemical storage rooms?

Yes or No

G. Have you installed energy recovery ventilation systems where feasible to bring in fresh air while recovering the heating or cooling from the conditioned air? Yes or No

CONTAMINANT CONTROLS

H. Radon: Have all ground-contact classrooms been tested for radon within the past 24 months? Yes or No

What percentage of all classrooms with levels greater than 4 pCi/L have been mitigated in conformance with ASTM E2121?

I. Carbon Monoxide (CO): If you have combustion appliances, do you have an inventory of all combustion appliances & do you annually inspect these appliances?

Yes, No or No combustion appliances

Are CO alarms installed which meet the requirements of the National Fire Protection Association code 720?

Yes or No

J. Mercury: Have all unnecessary mercury containing devices been replaced with non-mercury devices?

Yes or No

Explain:

Do you recycle or dispose of unwanted mercury laboratory chemicals, mercury thermometers, gauges and other devices in accordance with federal, state and local environmental regulations? Yes or No

K. Chromated Copper Arsenate (CCA): Have all wooden decks, stairs, playground equipment or other structures treated with Chromated Copper Arsenate been replaced or sealed within the past 12 months? Yes or No

L. Secondhand Tobacco Smoke: Is smoking prohibited on campus? Yes or No

M. Asthma Control: Do you have an asthma management program in place consistent with the National Asthma Education and Prevention Program's (NAEPP) Asthma Friendly Schools Guidelines? Yes or No

N. Indoor Air quality: Have you developed and implemented a comprehensive indoor air quality management program consistent with IAQ Tools for Schools? Yes or No

O. Moisture Control: Are all structures visually inspected on a regular basis and free of mold, moisture & water leakage? Yes or No

Is indoor relative humidity maintained below 60% (cold climates during freezing temperatures should target 20-30%)? Yes or No

Are moisture resistant materials/protective systems installed (e.g., flooring, tub/shower, backing, and piping)? Yes or No

P. Chemical Management: Do you have a chemical management program in place that includes the following elements?
- Chemical purchasing policy, including low- or no-VOC products
- Chemical inventory
- Storage and labeling

- Training and handling
- Hazard communication
- Spills, clean-up and disposal
- Select EPA's Design for the Environment
- Approved cleaning products

Yes or No

Explain:

R. Describe any other measures regarding the school building and natural environment that you take to protect student and staff health and which you feel should be considered:

Element 2B: High standards of nutrition, fitness, and quantity of quality outdoor time for both students and staff

FITNESS AND OUTDOOR TIME

A. What percentage of your students over the past year engaged in at least 150 minutes of school-supervised physical education and/or outdoor time per week?

What is the average amount of time over the past year that each student engages in school-supervised physical education and/or outdoor time per week (minutes/week)?

FOOD

B. Have you earned USDA's Healthier US School Challenge award for school food? Yes or No

List award level earned:

N/A

C. What percentage (by cost) of food purchased is certified as environmentally preferable (e.g. Organic, Fair Trade, Food Alliance, Rainforest Alliance, etc.)?

D. What percentage (by cost) of food purchased is grown and processed within 200 miles of the school (including food grown on school grounds)?

Does the school have an onsite garden in which the students participate? Yes or No

UV SAFETY

E. What percentage of your current student body has participated in EPA's Sunwise Program or an equivalent program?

PILLAR THREE: 100% of the school's graduates are environmentally and sustainability literate

There are many pathways to achieving a 100% environmental and sustainability literacy rate. Please answer all of the questions below, and you may supplement this information by also describing alternative benchmarks of progress(see final question).

LEARNING AND ENVIRONMENTAL LITERACY

Element 3A: Interdisciplinary learning about the key relationships between dynamic environmental, energy and human systems

A. What percentage of last year's graduates scored proficient or better during their high school career on state or school?

Environmental education assessments:

Sustainability assessments:

Environmental science assessments:

Briefly describe the assessment(s):

B. Does your school or your state have an environmental or sustainability literacy graduation requirement?

Yes or No

Describe:

C. Are environmental and sustainability concepts integrated throughout the curriculum? Yes or No

Describe:

- Please see Supporting Documents #1 for a list of environmental and sustainability based projects.
- Several teachers are educated in specific areas of conservation and sustainability:
- Tim Wood is a Master Naturalist and the Sustainability Coordinator
- Matt Diller has his Master's Degree in Sustainability
- Kevin Parentin has his Master's Degree in Outdoor Education

D. What percentage of your eligible graduates last year had completed Advanced Placement Environmental Science during their school career?

What percentage of these students scored 3 or better on the Advanced Placement Environmental Science assessment?

E. If neither your state or school conduct environmental science, sustainability or environmental education assessments, what percentage of your students scored proficient or better on science education assessments in the last year?

F. Are professional development opportunities in environmental and sustainability education available to all teachers at least every other year? Yes or No

Describe a few of these opportunities:

- STREAM Team in partnership with The Missouri Dept. of Conservation
- Teachers are involved in putting on collaborative workshops on sustainability
- Nature Unleashed is a conservation and environmental based curriculum, taught by The Missouri Dept. of Conservation. This is available to all teachers at The College School.

H. Does your environmental education program pay particular attention to scientific practices, such as asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using mathematics and computational thinking, constructing explanations, and engaging in argument and applications based on evidence? Yes or No

I. Do your students have meaningful outdoor experiences (an investigative or experiential project that engages students in critical thinking, problem solving and decision making) at every grade level? Yes or No

Element 3B: Use of the environment and sustainability to develop STEM content knowledge and thinking skills to prepare graduates for the 21st century technology-driven economy

A. Do your students graduate with a robust science education that includes a deep understanding of life, physical, and earth sciences? Yes or No

Describe(e.g., percentages of enrollment in environmental and other earth sciences, assessments and post-secondary school or career intended focus):

* Please see the attached Sustainable Environment and Education Policy

B. Does your curriculum provide a demonstrated connection between classroom content and college and career readiness, particularly to post-secondary options that focus explicitly on environmental and sustainability fields, studies, and/or careers? Yes or No

Describe:

COMMUNITY AND CIVIC ENGAGEMENT

Element 3C: Development of civic engagement knowledge and skills, and students' application of these to address sustainability and environmental issues in their community

A. What percentage of last year's graduates scored proficient or better on a community or civic engagement skills assessment?

B. Are your students required to conduct an age-appropriate civic/community engagement project around a self-selected environmental or sustainability topic at every grade level? Yes or No

What percentage of students satisfactorily completed such a project last year?

C. Do you partner with local academic, businesses, government, nonprofits, informal science institutions and/or other schools to help advance the school and community toward the 3 Pillars and/or assist the progress of other schools, particularly schools with lesser capacity in these areas? Yes or No Yes

Briefly describe the scope and impact of these partnerships:

* Please see Supporting Documents #1 for a list of environmental and sustainability based community projects.

D. Do you have outdoor classrooms on your grounds which include native plantings and do you use them to teach an array of subjects in context, engage the broader community and develop civic skills? Yes or No Yes

What other indicators or benchmarks (quantified whenever possible) of your progress towards the goal of 100% of your graduates being environmental and sustainability literate do you feel should be considered?

All graduates have taken a minimum of 80 hours of Environmental Issues class along with an additional 80 hours of Field Ecology class. These classes deal with sustainability, conservation and lead students down a path that helps them to understand the environment and their relationship with it.

For Public Schools only (Check all that apply): Charter Title I Magnet Choice

Name of Principal (Specify: Ms., Miss., Mrs., Dr., Mr., etc. as it should appear in official records):

Mrs. Sheila Gurley

Official School Name (As it should appear in the official records):

The College School

School Mailing Address (If address is P.O. Box, also include street address):

7825 Big Bend BLVD.

City, State, Zip

St. Louis, MO. 63119

County

St. Louis

State School Code Number*

Telephone Number

314-962-9355

Fax Number

314-962-5078

Website

www.thecollegeschool.org

E-mail

sgurley@thecollegeschool.org

I have reviewed the information in this application, including the award and eligibility requirements on pages 2-4, and certify that to the best of my knowledge all information is accurate.

Principal's Signature

Sheila H. Gurley
Head of School

Date

March 2, 2012

Name of Superintendent* (Specify: Ms., Miss, Mrs., Dr., Mr., Other)

N/A

District Name*

Private

Telephone Number

314-962-9355

I have reviewed the information in this application, including the award and eligibility requirements on pages 2-4, and certify that to the best of my knowledge all information is accurate. I concur that this is one of the highest performing green school applicants in our state.

Superintendent's Signature

Date

*Private Schools: If the information requested is not applicable, write N/A in the space.



1. The school meets all applicable federal civil rights and federal, state, tribal and local health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency _____ Department of Elementary and Secondary Education _____

Name of Nominating Authority _____ Mrs. Robin Coffman, Chief of Staff _____
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application, including the award and eligibility requirements on pages 2-4, and certify, to the best of my knowledge through a documentary verification assessment, that the school meets the provisions in this Part of the Nominee Presentation Form.

A handwritten signature in black ink that reads "Robin Coffman".

Date March 22, 2012

(Nominating Authority's Signature)

Note to Nominating Authority: The application, including the signed certifications and documentation of evaluation in the three pillars should be converted to a PDF file and emailed to Director, ED-Green Ribbon Schools at green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

Sustainable Projects at TCS

1. Photovoltaic Array

In 2005, we received a grant from the Missouri Department of Natural Resources for a solar array that generates approximately 1 Kilowatt of Energy that is directed into the schools electrical system. It supplies enough energy when it is operating at this rate to power the lighting in about 1½ class rooms.

2. Permeable parking lot

Spring of 2007--This was one of the first projects that reflected our school's commitment to sustainability. The permeable parking lot is designed to move water down into the soil instead of out into the street and down into the local creek. Rainwater runoff is a major factor in the destruction of urban stream ecology and hydrology.

3. Greenhouse

Fall 2007--Our Greenhouse is used for plant and soils studies, it also has a water play area for early childhood children. We grow native and vegetable plants from seed and propagate a wide variety of plants from cuttings. Last year, we distributed 200 tomato and pepper plants to our families and this year we will be distributing native plants grown from seeds collected on our campus

4. Garden

Fall 2007--We grow our vegetables and fruits using organic methods. Most of the produce from our garden ends up being eaten directly from the garden or used in our teaching kitchen to create salads and soups.

5. River Planting with Natives

In the fall of 2007—our Third grade class working with Litzinger Road Ecology Center, gathered native stream plants and stratified them to prepare them for spring planting. They were propagated in our greenhouse and then planted along the River our school environmental stream environment located on our upper school play area.

6. Butterfly Garden

In the fall of 2007, fifth grade planned and planted a Monarch butterfly garden, which was later certified as a Monarch Way Station. The project involved choosing plants for their nectar and larval food capacity and for their bloom time, size and color. Monarch butterflies laid eggs on some of the plants the following fall and larvae hatched and matured in the garden.

7. Single Stream Recycling

In 2008 we started using single stream recycling for all of the recyclables generated on our campus. Prior to this program we had several different dumpsters for recycling different materials and some materials were transported off campus to be recycled. Single Stream recycling has simplified the process and increased the amount of material recycled.

8. Composting

Fall 2008--We compost about 10 lbs of fruit and vegetable waste each day directly into our garden or into our composters. We also have several Vermi-Composters throughout the school. These utilize worms to break down organic material into high quality soil and compost.

9. Park Project

In the fall of 2008, members of The College School community in cooperation's with local residents and the City of Webster Groves undertook the restoration of Lockwood Park. A large section of the park had been overtaken with Bush Honeysuckle an exotic, invasive shrub that dominated the understory of a large part of the park. We spent two weekends removing and chipping the honeysuckle and have a replanting project scheduled for later in April. Through a grant from the Conservation Department we are replanting over 100 trees and shrubs and 50 wildflowers and prairie plants. Our goal is to increase the biodiversity of plants and animals in the park and reduce the amount of erosion into Spring Creek Watershed.

10. Wind Turbine

Fall 2008—we installed a vertical axis wind turbine from Mariah Power. It was a design researched and chosen by a small group of middle school students because it worked in low-level winds. It produces 1.2 Kilowatts of energy when operating at optimal efficiency. This electricity is directed into the school electrical system and has the capability of lighting almost two classrooms.

11. Rain Barrels

Spring 2008--Our Rain Barrel collection system was designed in conjunction with the 4th grade Water Unit. It captures about 770 gallons of water which is the amount generated from the roof that feeds it in a ½ inch rain event. Previously the runoff from the roof was being channeled to the parking lot in front of school and then into Lockwood Park. There is caused erosion problems, flowed into Spring Creek and then into Deer Creek. Because of the volume of water flowing into Deer Creek, the creek is being undermined both physically and ecologically.

Rainwater runoff destroys the ability of the creek to sustain both invertebrate and vertebrate species and erodes plants from the bank which in turn causes more erosion. Eroded soil fills the gaps between rocks on the bottom of the stream and covers aquatic species, their eggs, and larvae and destroy habitat.

12. Native Plants

2008--We began distributing native trees and plants to our families to celebrate Arbor Day, and promote native planting in our school communities. Last year, we gave away over three hundred trees to members of our school community. We have a butterfly garden planted on the south and west sides of our greenhouse planted by 5th grade students and native trees and shrubs planted around our track. About 85% of our campus is planted with native plants.

13. Green Roof

Fall 2008--We created a demonstration Green Roof installed outside of 2nd grade. It consists of 20 aluminum planting boxes that will be filled with sedum plants, some of them native, This project captures some of the water that falls on that roof and also capture some of the heat that falls on that roof. Green Roofs capture about 40% of the water that falls on them and also absorb about 40% of the heat from sunlight that falls on them. Although the roof we have chosen for our demonstration Green Roof is not an ideal roof for the application, it is the most visible roof at our school and will help us to educate our students and promote the concept of Green Roofs

14. Soup and Salad Lunch since

Spring 2008

Every Tuesday we provide a locally grown soup and salad lunch for about 150 members of our community. Students, faculty and parents take advantage of this opportunity to eat nutritious local foods and support local agriculture.

The food is provided by the Nutrition and Dietetics Department at St. Louis University's Fresh Gatherings Restaurant. We use real plates, bowls, and utensils for the meal. All leftover food is distributed to local people of need and all wastes are composted.

15. Dairy Queen Project

In the fall of 2008, our 5th grade worked with Robert Krugger a parent and Landscape Architect to clean up and plant an area behind the Dairy Queen located next to our school property. It was a great connection between our school and a local business. Unfortunately, we had very little germination and replanted the area with seed the following fall.

16. A.M. Clark Auto Repair

In the fall of 2009, our middle school Botany class spent three hours cutting the Bush Honeysuckle that had taken over the perimeter of the business property located just up the street from our school. After the class cut down the majority of the plant material, we brought in a chipper to reduce the plant material to mulch. Our K-2 classes walked up to the site over the winter and distributed native seeds collected from our campus planting beds. We have also

started almost 3000 plants from seed that we will use at the A.M. Clark and Dairy Queen sites. We will also distribute them to other schools through the Litzinger Road Ecology Centers Sustainable School Yard Program.

17. Sustainability Sign Tour

In the fall of 2009, we constructed a set of signs that allowed anyone interested to walk along a path that illustrates our sustainability projects. The signs helped to make our sustainability project more visible to our school community and visitors to our campus.

18. Solar Sign Illumination Project

A student researched solar lighting proposal was made and supported by the Building and Grounds Committee. The research and proposal were provided by Nathan Tung, (student) the proposal was voted on and passed on February 17, 2010.

19. Our Technology Department has arrange for the recycling of both batteries and ink cartridges both of which represent materials that can be damaging to the environment, but also very useful when recycled

20. A recent purchase of a leaf vacuum will make it possible for us to compost more materials from our campus into our garden. These materials were preciously put into a dumpster and hauled away.

21. Energy Conservation project—By simply going through our classrooms and asking students to see if reducing lighting impacts their learning, we found that we could reduce the lighting in each classroom by 33% by simple disconnecting the one light bulb in each fixture. This was easy, cost nothing and made students aware of a simple way to increase electrical usage. It was 4 times more effective that our wind turbine and solar array combined and it works all the time. We have conducted an energy audit and have some baseline information regarding electrical usage, but both we conducted prior to the new construction of both greenhouse and new dining hall.

22. Greenhouse Education-Tremendous progress can be made through many small efforts directed toward sustainability. Teaching students about alternative energy, energy conservation, rain water retention, the value of native plants, the importance of local foods, and making an effort to improve the quality of the world around you, allows us to not only work on our campus, but work in the homes and communities of our school families.

23. Working with many schools through Litzinger Road Ecology Center's Sustainable School Yards program, we see that our school's involvement in natural community restoration is unmatched in the St. Louis area. Using our school as a base and working in concentric circles to improve the quality of habitat in our area, we have made tremendous progress and educated, students, residents, city government, and businesses of the importance of being stewards of the environment.

We want to increase the biodiversity of the environment around our school. We took areas that had very few plant species and eliminated invasives and introduced a tremendous number of new species. This native plant species will attract a greater diversity of animals and will increase the opportunities for everyone to interact with and simply enjoy more wildlife.

I think our work with environmental restoration is a wonderful example of stewardship. It started with our commitment to reducing rainwater runoff with our permeable parking lot and led to our use of native plants on our campus. As we solved problems on our campus, we looked beyond our campus to see where we could have a positive impact. Fortunately, we did not have to look too far. Our local park and surrounding areas all needed someone to bring them back in balance. I also work with St. Louis County Parks to decrease the spread of invasives through their volunteer program.

23. TCS helped to bring David Sobel—A well know author on place based and environmental education to St. Louis in conjunction with the Botanical Garden and Webster University. Many of our teachers have worked closely with Litzinger Road Ecology Center through their Sustainable School Yard Program.

24. The La Barque Creek Campus, purchased in 2010, is a 28 acre environmental education site located 30 minutes from St. Louis. The La Barque Campus provides students with opportunities to learn about and interact with nature in joyful, meaningful, and creative ways. The campus will provide adventurous and experiential ways for students to learn about the natural world.

The La Barque Campus will provide an environmental learning site that will instill a life-long love of nature, provide opportunities for students to actively engage in environmentally based service projects, and it will be a model for sustainability for our school and the community as a whole.

A role of our La Barque Campus is to engage the broader community to promote environmental stewardship and sustainability. We want to be a partner in the watershed and the environmental learning community as a whole.





CLASS
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USGBC St Louis Regional Chapter GGA 2010

Educator Category: TCS

LEED 2012 for Schools Checklist

	Phase I Big Bend Blvd Site Demo 2 Story Bldg and Parking Lot Upgrade	Phase II Newport Ave Side New Playground plus Dining Hall/Kitchen Renovation and Parking Lot Upgrade	Phase III New Construction Greenhouse and Wind Turbine
<u>Sustainable Sites</u>			
Prereq 1 Construction Activity Pollution Prevention	some matls recycled		
Prereq 2 Environmental Site Assessment			
1 Site Selection	existing site	existing site	existing site
2 Development Density and Community Connectivity	urban location on bus routes	urban location on bus routes	urban location on bus routes
3 Brownfield Redevelopment	not applicable	not applicable	not applicable
4.1 Alternative Transportation- Public Transport Access	on bus line; near Metro	on bus line; near Metro	on bus line; near Metro
4.2 Alternative Transportation- Bicycle Storage and Changing Rooms	Bikes allowed inside (Teachers/Staff)	Bikes allowed inside, new rack outside	
4.3 Alternative Transportation- Low Emitting and Fuel-Efficient Vehicles			
4.4 Alternative Transportation- Parking Capacity	Increased no of spaces on this side	Decreased no of spaces on this side	
5.1 Site Development-Protect or Restore Habitat	all work in areas that were asphalt	plantings for grass strip at street	asphalt converted to garden beds
5.2 Site Development-Max Open Space	Demo 2 story frame bldg		
6.1 Stormwater Design-Qty Control	Permeable pavement	Additional Permeable pavement	
6.2 Stormwater Design-Quality Control	Runoff collected in rain garden		
7.1 Heat Island Effect-Non-Roof	Asphalt removed; white concrete	Additional asphalt removed; white concrete	
7.2 Heat Island Effect-Roof	White roofs installed on drama and Pre-K buildings		Green roof pans
8 Light Pollution Reduction	New parking lot lights face down	New parking lot lights face down	
9 Site Master Plan	Yes	Yes	
10 Joint Use of Facilities			
<u>Water Efficiency</u>			
Prereq 1 Water Use Reduction 20%			
1 Water Efficient Landscaping	Natives, bog garden		
2 Innovative Waste Water Reduction Technologies			
3.1 Water Use Reduction		1.6 gpf toilets; motion detector sinks	
3.2 Process Water Use Reduction			
<u>Energy and Atmosphere</u>			
Prereq 1 Fund. Commissioning of Bldg Energy Systems		New HVAC unit to serve dining hall/kitchen	Greenhouse has: Gas unit heaters, packaged cooling system
Prereq 2 Minimum Energy Efficiency Performance			
Prereq 3 Fundamental Refrigerant Management			
1 Optimize Energy Efficiency Performance	only demolition and site improvement work	not major renovation	

LEED 2012 for Schools Checklist

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2 On-Site Renewable Energy			wind turbine (had solar PV already)
3 Enhanced Commissioning			
4 Enhanced Refrigerant Mgmt			
5 Measurement and Verification			
6 Green Power			
<u>Materials and Resources</u>			
Prereq 1 Storage and Collection of Recyclables			
1.1 Building Reuse-Maintain Existing Walls, Floors, and Roof			
1.2 Building Reuse-Maintain 50% of Interior Non-Structural Elements			
2 Construction Waste Mgmt	we think, need documentation		
3 Materials Use			
4 Recycled Content			
5 Regional Materials	yes, need documentation		
6 Rapidly Renewable Materials	linoleum flooring in drama building	linoleum flooring/bamboo flooring in Pre-K	brick, concrete, glass
7 Certified Wood			
<u>Indoor Environmental Quality</u>			
Prereq 1 Minimum Indoor Air Quality Performance			
Prereq 2 Environmental Tobacco Smoke Control			
Prereq 3 Min Acoustical Performance			
1 Outdoor Air Delivery Monitoring			
2 Increased Ventilation		yes, controlled outside air and more	
3.1 Construction IAQ Mgmt Plan-During Construction			
3.2 Construction IAQ Mgmt Plan-Before Occupancy	only demolition and site improvement work		
4 Low-Emitting Materials			
5 Indoor Chemical and Pollutant Source Control			
6.1 Controllability of Systems-Lighting		yes in dining hall	
6.2 Controllability of Systems-Thermal Confort			
7.1 Thermal Comfort-Design			
7.2 Thermal Comfort-Verification			
8.1 Daylight and Views-Daylight		added windows in brick wall	

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8.2 Daylight and Views-Views		lunch and aftercare more natural light and conference room	
9 Enhanced Acoustical Performance			
10 Mold Prevention			
<u>Innovative and Design Process</u>			
1.1 Innovation in Design: Permeable pavement/Landscape combination	Water stored under permeable pavement runs to bog garden		
1.2 Innovation in Design: Reduced Conditioned Square Footage		Demolished building and excavated rooms that were within original bldg footprint	
1.3 Innovation in Design: Student-Led Project			Students evaluated feasibility and presented project for approvals including to mayor
1.4 Innovation in Design: Specific Title			
2 LEED AP			
3 The School as a Teaching Tool			Greenhouse and Curriculum
Regional Priority Credits 63119 zip code			
1.1 SSc1			
1.2 SSc5.1			
1.3 SSc6.2			
1.4 EAc2			
MRc2			
MRc5			