Sustainability Best Practices:

Building Materials & Outdoor Space

2019/2020 Report

Sustainability Committee:

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The SCHOOL in ROSE VALLEY
All children deserve a school that they love.

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INTRODUCTION:

What is Environmental Sustainability?

According to the United States Environmental protection Agency sustainability is based on a simple principle: "Everything that we need for our survival and well-being depends, either directly or indirectly on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations." (EPA)

According to the United Nations World Commission on Environment and Development, "Sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs." (United Nations Academic Impact)

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GUIDING PRINCIPLES:

What is sustainability as it relates to a school environment?

When this year's committee began working on what Sustainability meant to the school we spoke about how we as a committee could become a catalyst for change within the school.

It became clear that we wanted the work to be guided by several principals:

1. Environmental Sustainability should be intertwined with decision-making procedures with equal footing to that of financial and social decsions. This thinking is largely based on the committee research into the interconnection between Sustainability as it relates to the environment, the community, and the people within that community. Meaning, true financial, and social sustainability can not be achieved if environmental sustainability is not equally considered.
2. Environmental Sustainability should be acknowledged in the Current Strategic Plan and the Campus Master Plan as it is created.
3. Environmental Sustainability education and action should be incorporated into student-centric lessons as often as possible.
    a. For example- celebrating environmental-themed calendar events: World Water Day, World Food Day, Earth Day, The United Nations Sustainable Development Goals.
4. Sustainability Best Practices will help to incorporate decision-making procedures that are better able to consider all financial, social, and environmental implications of the School's actions.
5. The Sustainability Committee along with the student body should be charged with assessing the overall Sustainability of the school on a yearly basis to help guide the next opportunities for change. (See Resources #1 for assessment tool)

SUSTAINABLE BEST PRACTICES:

SUSTAINABLE BEST PRACTICES This section outlines Sustainable Best Practices for building materials and outdoor space as defined by EcoPro, Certified Sustainable Landscape Professionals and adapted for the purposes of the School in Rose Valley. The best practices are organized around eight key principles:

- Protect and Conserve Soils
- Conserve Water
- Protect Water and Air Quality
- Protect and Create Wildlife Habitat
- Conserve Energy
- Sustain Healthy Plants
- Use Sustainable Methods and Materials
- Protect and Enhance Human Health and Well-being

Since many practices conform to multiple principles, the right-hand columns cross-link the practices to the applicable principles. There is some duplication of best practices. (ecoprocertified)

PROTECT AND CONSERVE SOIL:

Key concepts: soil protection zones, soil management plans, amending soils, mulching, mulch- mowing, composting, managing stormwater runoff and erosion, minimize soil disturbance, closed system management

Design, Construction & Maintenance:

		Impact Category							
✓	**Impact Item**	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Soil Test Yearly	X	X				X		
	Soil Mgmt Plan for runoff	X					X		
	Monitor Soil Drainage for Flooding and Runoff	X	X				X		
	Define Soil boundaries	X					X		
	Design landscape w/ Natives								
	Retain natural features that slow and store stormwater flows								
	Protect from compaction								
	Minimize grading and soil disturbance								
✓	**Impact Item**	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Protect Tree								

	Roots w/ Mulch to the dripline								
	Improve existing soil with cover crop and onsite compost before purchasing topsoil offiste	X	X	X	X			X	X
	Apply organic mulches a few inches from the base of trees and plants and extending at least to the dripline	X	X	X	X			X	X
	Allow fallen leaves to remain as mulch in landscaped beds and natural areas	X				X	X	X	X
	Feed the Soil & Shrubs w/ Compost Tea	X					X	X	
	Apply Compost 2x/year to beds	X	X	X			X	X	X
	Avoid practices that degrade soil fertility & biodiversity	X	X	X			X	X	X
	Avoid synthetic barriers & mulches	X		X		X	X	X	X
	Keep debris & leaves away from storm drains	X		X					X
	Use fertilizers that are OMRI cert. & natural	X		X	X	X	X	X	X

CONSERVE WATER:

Key concepts: irrigation water conservation, irrigation system/design/maintenance efficiency, certified designers, sustainable irrigation materials, water budget, conservation/weather-based irrigation management, water use monitoring and auditing

Design, Construction & Maintenance:

		Impact Category							
✓	**Impact Item**	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Map plants, hydrozones, & soil types	X	X	X			X		X
	Include irrigation system controller & maintenance into Campus Master Plan and yearly checklist		X			X	X	X	X
	Design w/ native drought tolerant plants	X	X				X	X	
	Collect rainwater for gray water use		X	X				X	X
	Design recycling water features		X						
	Use drip irrigation for max. efficiency	X	X	X			X	X	X
✓	Impact Item	Soil Quality & Conservation	Conserve Water	Water & Air Quality	Wildlife Habitat	Energy	Sustain Healthy Plants	Methods & Material	Human Health
	Test & repair irrigation system @ start of each season		X					X	
	Set & adjust		X	X			X		X

	irrigation as needed to avoid over watering & minimize evaporation								
	Monitor & maintain irrigation regularly		X	X			X	X	
	Add smart controllers		X				X	X	
	Reduce field areas where possible to reduce water, fertilizer and maintenance needs	X	X	X				X	X
	Use rain barrels & soaker hoses whenever possible	X	X	X	X		X	X	

PROTECT WATER & AIR QUALITY:

Key concepts: Stormwater Infrastructure, low impact development, onsite water filtration, prevent erosion, air movement, sound absorption, carbon cycle

Design, Construction & Maintenance:

		Impact Category							
✓	**Impact Item**	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Design features that direct runoff into rain gardens, swales, rain barrels, & pervious surfaces	X	X	X					X
	Minimize impervious surfaces	X		X			X		X
	Avoid using treated materials, toxins & pollutants	X		X				X	X
	Use 'Soft Methods for managing erosion and runoff	X		X		X		X	X
	Avoid using hardscape solutions to manage erosion and flooding	X		X				X	X
✓	**Impact Item**	**Soil Quality/Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Use lowVOC	X		X		X		X	X

	paints & solvents								
	Source materials from local suppliers			X		X		X	X
	Avoid draining, disturbing or filling wetlands	X	X	X			X		X
	Amend soil to maximize water-holding capacity & drainage	X	X	X			X		
	Design for minimal power tool use in maintenance			X		X		X	X
	Ensure grading on land direct runoff to spread and disperse into soil, swales & rain gardens	X	X	X	X		X		
	Use energy efficient equipment & power tools	X		X		X		X	X
	Use hand tools as much as possible	X		X		X		X	X
	Maintain pervious paving			X				X	X
	Eliminate use of Chemical pesticides	X		X		X	X	X	X
	Eliminate use of synthetic fertilizers	X		X		X	X	X	X
	Minimize/avoid use of power tools on campus			X		X		X	X

PROTECT & CREATE WILDLIFE HABITAT:

Key concepts: Protect/ conserve/ build/ enhance/ biodiversity & wildlife habitats

Design, Construction & Maintenance:

	Impact Category

✓	Impact Item	Soil Quality & Conservation	Conserve Water	Water & Air Quality	Wildlife Habitat	Energy	Sustain Healthy Plants	Methods & Material	Human Health
	Design landscape to provide food, water, shelter for native wildlife				X				X
	Protect existing native wildlife and their habitat	X		X	X		X		X
	Minimize high maintenance landscape with less habitat for wildlife	X	X	X	X	X	X	X	X
	Preserve existing mature trees	X		X	X		X		X
	Retain wetlands & existing natural areas	X		X	X		X		X
	Plan for adaptive management in response to wildlife impacts				X				
	Eliminate use of pesticides that are harmful to wildlife	X	X	X	X	X	X	X	X
	Maintain habitat for pollinators & bio predators				X		X	X	X
	Impact Item	**Soil Quality/Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Minimize impacts to existing desirable vegetation in any construction projects				X		X		

	Schedule maintenance tasks to avoid disturbing native wildlife and their habits				X				
	Avoid cultivation of landscaped areas to retain soil organisms and habitat	X	X		X	X	X	X	
	Minimize pruning to enhance habitat				X	X			
	Avoid premature removal of flower, stem and seed heads that provide a food source				X				
	Allow decomp. of organic matter on the surface of garden beds as natural mulch to protect & build habitat for amphibians, arachnids & insects		X	X	X			X	X
✓	**Impact Item**	**Soil Quality/Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Eliminate use of pesticides that are harmful to wildlife	X	X	X	X	X	X	X	X
	Create diversity in landscapes to encourage natural pest control				X	X	X		X
	Convert dead or dying trees to habitat snags for				X	X			

	birds and other Wildlife								
	Create diversity in landscapes to encourage natural pest control				X	X	X		X

CONSERVE ENERGY:

Key concepts: Embodied energy, low energy use materials/features, fuel efficient equipment/power tools, vehicle fuel reduction, manual tools/methods

Design, Construction & Maintenance:

		Impact Category							
✓	**Impact Item**	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Select site appropriate landscaping to minimize mowing, pruning and power tool needs	X	X	X	X	X	X	X	X
	Design with plants that minimize adjacent buildings energy consumption					X		X	X
	Consider the sustainability of transportation and manufacturing when choosing plants and vendors		X		X	X	X	X	X
	Use energy efficient lighting including, LED, Solar and timers on all new installations					X		X	X
✓	**Impact Item**	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**

	Use low embodied energy materials				X	X		X	X
	Design for minimal for energy use on all new or improved construction					X		X	X
	Select battery powered, electric, propane or other alternative energy power tools	X		X		X		X	X
	Choose & Use hand tools whenever possible	X		X		X		X	X
	Schedule maintenance & related activities to minimize travel	X		X		X		X	X
	Choose low-emission equipment	X		X		X		X	X
	Avoid use of 2-cycle gas powered equipment	X		X		X		X	X
	Choose & use 4-cycle gas powered equipment	X		X		X		X	X

SUSTAIN HEALTHY PLANTS :

Key concepts: Right plant/right place, low input landscapes, no pesticide use, integrated pest management, plant health care, human health care

Design, Construction & Maintenance:

		Impact Category							
✓	**Impact Item**	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Use locally sources produced and propagated plants that certify sustainable production	X	X	X	X	X	X	X	
	Use organic whenever possible	X	X	X	X	X	X	X	
	Design plantings to maximize soil coverage	X	X				X		
	Use natural communities as a guide to group plants by needs		X		X		X		
	Place plants in proper location to prevent poor performance		X				X		
	Avoid use of synthetic mulch like rubber	X	X	X	X	X	X	X	
	Use disease & pest resistant plants	X		X		X	X	X	
	Impact Item	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**

	Develop a Landscape Mgmt Plan to guide maintenance activities	X	X	X	X	X	X	X	
	Inspect all vegetation regularly for health pests & diseases				X		X		
	Remove & Replace non-native, pest susceptible plants	X	X	X	X	X	X	X	
	Do not place edible plants near toxic materials like treated wood						X		
	Thin or transplant overplanted material as needed to allow room for growth						X		
	Promote nutrient cycling & deep rooting by mulch mowing @ 2-4”		X	X	X	X	X		
	Establish action steps for managing pests						X		
	Use ground cover to shade soil.	X		X		X	X	X	X
	Use 2-4 inches of organic mulch to suppress weed ie. cardboard, arborist wood chips and bark	X		X			X	X	X

SUSTAINABLE METHODS & MATERIALS :

Key concepts: sustainable materials, salvage landscape plants, recycled content, composting, closed system management

Design, Construction & Maintenance:

Impact Category

✓	Impact Item	Soil Quality & Conservation	Conserve Water	Water & Air Quality	Wildlife Habitat	Energy	Sustain Healthy Plants	Methods & Material	Human Health
	Specify & Use renewable, biodegradable & recycled materials	X	X	X		X		X	X
	Use new materials that contain recycled content		X	X		X		X	X
	Use locally sourced Materials			X		X		X	X
	Design w/ materials that can be repurposed, reused or recycled		X	X		X		X	X
	Use FSC certified wood products	X		X	X	X	X	X	X
	recycle compost and mulch	X		X		X	X	X	X
	Re-use on site structures, hardscapes and landscape materials			X		X		X	X
	Impact Item	**Soil Quality & Conservation**	**Conserve Water**	**Water & Air Quality**	**Wildlife Habitat**	**Energy**	**Sustain Healthy Plants**	**Methods & Material**	**Human Health**
	Avoid use of PVC and other non-biodegradeable materials	X	X	X	X	X	X	X	X
	Purchase from manufacturers whose process reduce resource consumption & waste		X	X		X		X	X
	Use edible plants in planting design							X	X
	Design to		X			X		X	X

	maximize water & energy conservation								
	Salvage, reuse, compost & recycle materials whenever possible	X	X	X	X	X		X	X
	Dispose of waste material in most environmentally sound way possible	X	X	X		X		X	X
	Use salvaged landscape materials	X	X	X	X	X		X	X
	Recycle used plant containers		X	X		X	X	X	
	Install low impact & GSI features	X		X	X		X	X	X

RESOURCES:

1. **Circles of Sustainability**
2. **EcoPro Certified Landscape Professional**
3. **U.S. EPA**