



Green Campus Toolkit

Sustainable Strategies for Facilities & Operations



INTRODUCTION

The Green Campus Toolkit is a practical guide for integrating sustainability into the daily operations and long-term planning of schools. It offers strategies to improve environmental performance through community engagement, healthier indoor/outdoor spaces, energy and water conservation, waste reduction, and green transportation and cleaning practices.

Designed to be adaptable and easy to use, the toolkit supports schools in creating safer, more efficient, and environmentally responsible campuses. It draws on best practices from across the education and sustainability sectors. This resource is ideal for schools looking to build a greener future through informed, practical action.

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COMMUNITY ENGAGEMENT & EDUCATION

Benefits of Community Engagement

- Transparency
- Builds Trust
- Relevance
- Reduced Risk Management

Parents & Guardians

- Actively involved in their children's education.
- Provide learning support at home.

Teachers & Students

- The academic and personal growth of students are directly shaped by teachers.
- Culture on campus improves for everyone.

Supporting Staff

Counselors, custodial staff, cafeteria staff, secretaries, nurses, janitors are essential to the learning environment and student well-being.

Board of Directors

- Get support from the school board on sustainability issues and why they are important
- Everyone wants Healthy campuses

Administrators/Facility Managers

These are the implementors! Setting the tone and behavior changes for the campus. You need Administrative buy in for this to work!

Secondary Stakeholders

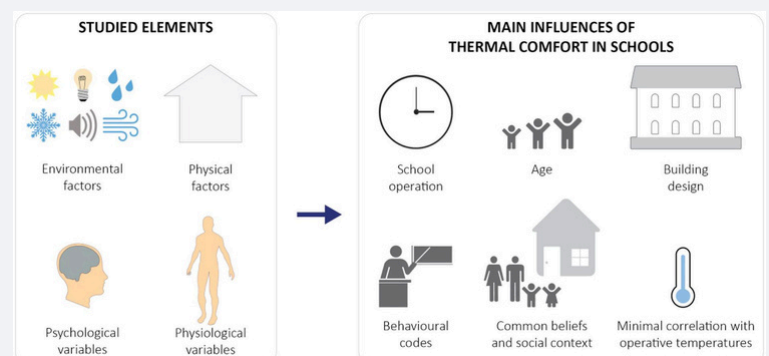
- Non profits that support programing, funding and education around behavior changes.
- Industry experts

Sustainability Planning and Process

Develop mission statement	Identify Barriers to achieving a Green campus
Set Sustainability goals	Document opportunities and assumptions
Target Outcomes	Define what success look like

Integrate Sustainable Education Across the Curriculum

- Educate and encourage students to practice sustainability using strategies like project-based learning, formation of eco-clubs, field trips etc.
- Connect to students to organizations and experts



Source: Thermal comfort in educational buildings: The Classroom-Comfort-Data method applied to schools in Bogotá, Colombia - ScienceDirect

INDOOR/OUTDOOR ENVIRONMENT QUALITY

Improve Indoor Environment Quality

Indoor Air Quality

- Maximize natural ventilation
- Optimize HVAC systems and improve filtration
- Using low-emitting materials
- Control moisture and mold growth

Thermal Comfort

- Optimize temperature and humidity control
- Consider using passive strategies like insulation, high thermal mass materials, shading devices.
- Occupant control

Visual Comfort

- Maximize natural daylighting
- Utilize lighting controls
- Manage glare and contrast
- Reduce visual fatigue and increase accessibility

Acoustic Comfort

- Introduce noise barriers; seal gaps and openings.
- Incorporate sound-absorbing materials and fabric wall coverings.

“

- Natural Systems
- Human Perception
- Human/Nature Interaction

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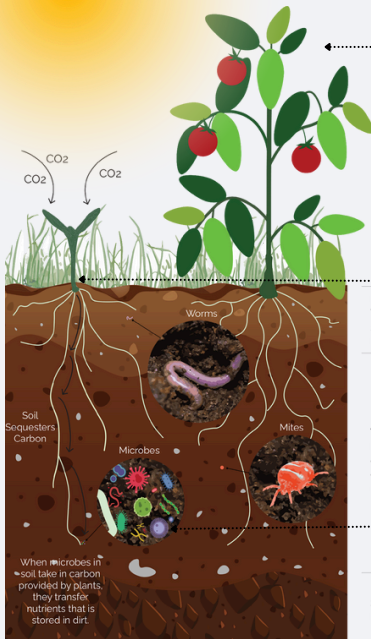
—Integrate Biophilia in Learning Spaces using

Improve Indoor Environment Quality

Poor IEQ results from:	Improved IEQ results in:
Deferred Building Maintenance	Enhanced student health and well-being
Improper ventilation	Improved academic performance
Contamination from VOC's, Outgassing of building materials and cleaning supplies.	Improved Experience on Campus
Inadequate lighting	Reduced operational costs

Improve Outdoor Environment Quality

Consider Carbon Sequestration



Plants use solar energy to initiate carbon cycle. They break down H_2O in soil.

Plants absorb CO_2 from atmosphere and bind with hydrogen to produce sugar.

Soil organic matter stores about 45% of carbon



Identify and create spaces for outdoor learning experience.

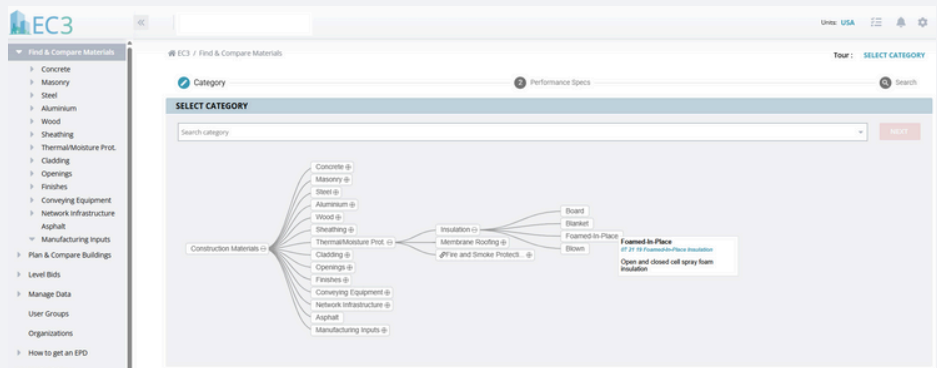


Oakland Unified School District

Establish a school garden where students can learn about plant biology, eco-systems, food systems, water conservation, etc

1. Reduce extreme [outdoor] heat:

- Reduce hard surface and increase green spaces and shade structures.
- Create cooling corridors to improve micro-climate
- Use reflective surfaces/finishes
- Use sustainable building materials
- Use eco-friendly surfacing options
- Prioritize tree and grass planting.



Source: <https://buildingtransparency.org>

IMPROVE ENERGY EFFICIENCY

Optimize Building Performance

Use large windows, skylights and other light setors to maximise natural lighting
 Improve insulation in walls, roofs, windows.
 Minimize heat loss and gain

High Efficiency HVAC Systems

Upgrade HVAC systems like Geothermal heat pumps and energy recovery ventilations systems.
 Programmable thermostats.
 Regularly maintain HVAC systems.

Smart Energy Management and Monitoring

Implement smart energy management systems to track energy use and optimize building performance.
 Conduct regular energy audits



Energy-Efficient Lighting and Appliance Systems

Replace traditional lighting with LED fixtures
 Introduce smart lighting control using motion sensors and timers.
 Schedule use of appliances and equipments.

Renewable Energy Sources

Integrate renewable energy sources like solar panels. Explore other renewable strategies
 Participate in programs that allow schools to reduce energy consumptions

Energy Conservation Behaviors

Encourage energy efficiency practices.
 Implement energy efficiency programs to educate students and staff

Poor IEQ results from

Improved IEQ results in

Deferred Building Maintenance	Increase productivity
Improper ventilation	Promote well-being
Contamination from VOC's, Outgassing of building materials and cleaning supplies.	Increase Energy efficiency
Inadequate lighting	Enhance building performance



WATER CONSERVATION STRATEGIES

01	Fix leaks
02	Install Low-flow fixtures
03	Rainwater Harvesting
04	Greywater Recycling
05	Xeriscaping (Use native plants for landscaping)
06	Mulching (Protective layer over the soil)
07	Smart Irrigation Systems
08	Monitoring Water Usage

Mulching regulates soil temperature and helps enrich soil



PLUMBING

Leak detection
Leak repair
Dual-flush toilets
Low flow plumbing fixtures

RUNOFF MANAGEMENT

Runoff collection
Green roofs
Permeable pavements

RAINWATER HARVESTING

Used for toilet flushing
Used for irrigation

LANDSCAPING

Smart irrigation controllers
Drip irrigation
Water-efficient landscaping
Drought-resistant plants

WASTE MANAGEMENT STRATEGIES

Recycling Programs –

Separate bins for paper, plastics, and metals to encourage student participation.

Reduce Single-use Items –

Replace disposable cutlery, straws, and bottles with reusable alternatives.

Composting –

Cafeteria food waste and green waste turned into compost for campus landscaping.

Digitalization –

Promote e-assignments, e-notices, and digital tools to minimize paper use.

COMPOSTABLE

Used for food scraps., yard waste, coffee grounds, and paper products that can decompose naturally and enrich the soil

RECYCLABLE

Used for paper, cardboard. plastics, glass, and metals that can be processed and reused to create new products

GENERAL

Used for non-recyclable Items like dirty paper. plastic bags, and broken items that can't be composted or recycled

HAZARDOUS

Used for chemicals batteries, paint, electronics. and other materials that. are dangerous to health and the environment.

5R's of Waste Management

Repurpose

Find new purposes for items. This is also known as up-cycling in the green or environmental circle.

Recycle

As the last resort, recycle materials that cannot be refused, reduced, reused, or repurposed. Recycling conserves resources by converting waste into new materials, but it still requires energy to collect, process, and manufacture new products.



Refuse

Minimize waste generation like refusing materials like single-use plastics and non-recycling products.

Reduce

Reduce harmful, non-reusable materials and lessen consumption. Buy products with less packaging and purchase in bulk. Consider carefully items you truly need before making purchases.

Reuse

Consider new ways for multiple use of items rather than discarding them. For example use of refillable a reusable water bottle, storing foods in glass jars and donating old clothes.

GREEN TRANSPORTATION/CLEANING

Daily commuting by students and staff is a significant source of carbon emissions on campus. Single use transportation cause traffic congestion and air pollution.

Benefits of Green Transportation

- Reduces greenhouse gas emissions
- Reduce traffic congestion
- Enhance community health and safety

Encourage Walking & Cycling – Provide safe sidewalks and bike racks.

Optimize Bus Routes & Carpooling – Reduce emissions and traffic congestion

Public Transit Incentives – Discounts for students and staff.

Electric or Low-emission Buses – Transition towards cleaner school transport.

Green Cleaning Practices

- Use eco-friendly or plant-based products.
- Avoid harsh chemicals like chlorines, ammonia, phosphates
- Optimize cleaning processes



RESOURCES

1. **SoCalGas - Energy Efficiency Programs:** <https://www.socalgas.com/savings/energy-saving-tips-and-tools/energy-efficiency-contracted-programs>
2. **SoCalGas - Rebates + Incentives:** <https://www.socalgas.com/savings/rebates-and-incentives>
3. **Article on Sustainability Goals:** <https://www.usgbc.org/articles/achieving-sustainability-goals-high-performance-school-renovations>.
4. **Campus Greening Webinar Recording:**
https://drive.google.com/file/d/16c7CI9Of_MQjT1BZlToHLtO1L5drWS8/view
5. **Article on Indoor Environmental Quality:** <https://www.usgbc.org/articles/green-building-101-what-indoor-environmental-quality>.
6. **USGBC-CA Best Practice Guides:** <https://usgbc-ca.org/white-papers/>
7. **Thermal Comfort:** <https://www.glazingrefurbishments.co.uk/blog/thermal-comfort-in-buildings#:~:text=Providing%20occupants%20with%20options%20to,collective%20and%20personal%20needs%20effectively>.
8. **Biophilic Design:** <https://harrogategardendesign.co.uk/services/biophilic-design/>.
9. **Greening Existing Schools:** <https://www.usgbc.org/articles/greening-existing-schools-webinar-explores-sustainability-strategies>.
10. **Building Performance Calculator:** <https://usgbc-ca.org/ca-building-performance-calculator/>
 - a. Building Performance Hub coming soon!

For more information on our Green Schools Program or how your district can get started on a sustainability plan please visit:

usgbc-ca.org/programs/green-schools/

or email training@usgbc-ca.org