



PUTTING SUSTAINABLE DESIGN AT THE FOREFRONT: Ohio's Push for Green Schools

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OHIO FACILITIES CONSTRUCTION COMMISSION

OHIO SCHOOL FACILITIES COMMISSION



OFCC Overview

Funding & Programs

School Funding

Akron City SD
National Inventors Hall of Fame

Ohio School Design Manual (OSDM)

- Basis of K-12 planning and design (planning principles)
- Minimum standards of building systems & materials



Ohio School Design Manual (OSDM)

Annual Update

- SF/Child
- Cost/SF
- Systems & Materials
- Regional Construction Costs



LESKO ARCHITECTURE

MIDVIEW MIDDLE SCHOOL
MIDVIEW LOCAL SCHOOL DISTRICT

Cafeteria



Science Lab

LESKO ARCHITECTURE

MIDVIEW MIDDLE SCHOOL
MIDVIEW LOCAL SCHOOL DISTRICT

OFCC
OHIO FACILITY COST CENTER

Master Facilities Planning

- 26 point Facility Assessment
- 10 year Enrollment Projections
- Standard Square Foot per Child
- Cost per Square Foot





Operating Cost Concerns

- Addition of Air Conditioning
- State of the Art Technology
- Potentially larger facilities
- New/different HVAC system - operations



Toledo City SD
Beverly K-8

September, 2007 - Commission Resolution LEED Initiative



Cincinnati City SD
Pleasant Ridge Montessori
OFCC 1st LEED School

LEED Silver - Contractual Requirement
Project Team Improvement
Green Product Availability - Industry Advancements
Project Delivery Method Changes



Cincinnati Public SD
Rothenberg Preparatory Academy

Cincinnati City SD
Rothenberg Preparatory Academy

Rooftop Gardens & Community
Space



Environmental Education
Opportunities

Partnerships with local businesses
and community organizations

Grants to enhance sustainable
features or energy efficiencies



Ohio is Leading the Nation in LEED Green Schools OFCC - 363 Projects to Date

242 LEED
Certifications
Certified – 5
Silver – 152
Gold – 82
Platinum – 3



© Joe Harrison, JH Photography Inc

Cincinnati City SD: Sands Montessori

Cincinnati City SD
Sands Montessori

Extended Learning Areas
Flexible Space & Furniture
School as a Teaching Tool
Community Use



© Joe Harrison, JH Photography Inc

Daylight Harvesting
Lighting Levels
Occupant Control
Occupancy sensors for
each room/area.



Energy Goals & Savings

OSDM Energy Goals - 30% Increase

Certified Projects

Designed an average of 33% more efficient than ASHRAE Standards

Pettisville Local SD
New K-12



HVAC Efficiencies
Building Envelope & Insulation
Daylight Harvesting & Strategies

- *Skylights*
- *Occupancy Sensors*
- *Light wells*
- *Solar Tubes*



Clyde-Green Springs EVSD
McPherson Middle School

There is failure to train teachers and staff on why we leave the blinds open and windows closed. We need to teach them how to live in a green school.

Construction Hard Cost for 200 LEED Certified Projects: \$2.8B

Recycled Content Average 33%

\$712 M for building products containing recycled materials

Edgewood City SD
High School



Construction Hard Cost for 200 LEED Certified Projects: \$2.8B

Regional Material Average 32%

\$628M for building products obtained within 500 miles



Milton-Union EVSD
New K-12



Solar Panels & Windmill
Daylight Harvesting
Solar Hot Water
Efficient HVAC w/Ice Storage
Lighting Controls
Rainwater Harvesting
Bio swales & Rain Gardens
Rooftop Garden
Native & Adaptive Plants
School as a Teaching Tool

Current Energy Usage
\$0.86 cents a Square Foot

Milton-Union EVSD
New K-12



Water Savings



OFCC LEED Schools are designed to save an average of 37% more water.

Milton-Union EVSD
Rainwater Harvesting System

Urban Green Roof
Manages Stormwater
Insulates Building
Protects Roof
Enhances View
Native & Adaptive Plants
Educational Opportunity

33,000 SF Green Roof



Cincinnati Public SD
Taft IT High School
LEED Platinum



Construction Waste Diversion

81% Average per Project

368,677 Tons of Waste
&
141,923 Cubic Yards of Waste



366,000 Tons is equal to approximately
91,732 Large Elephants

Cincinnati City SD
Clark Montessori
Gabion Wall (former Clark School)



Ohio's K-12 Schools for Tomorrows Education

Sustainable 21st Century Schools



Cincinnati City SD
North Avondale



Reynoldsburg
City SD
Summit Road High
School
STEM Academy

Photos courtesy of Moody-Nolan/Brad Feinknopf (Feinknopf Photography)

Incorporated Environmental Education into school building as part of STEM
Green house and garden on second story roof
Rainwater catchment for watering needs
Environmental educational opportunities
Raingardens and rainwater management system for natural return of water



Reynoldsburg City SD
Summit Road High School

Reynoldsburg City SD
Summit Road Elementary
STEM Academy

The buildings teach
students every day with
various signage.



Photo courtesy of Moody-Nolan/Brad Feinknopf (Feinknopf Photography)



Ohio's Green School Story in the recent issue of USGBC+ Magazine!

HEAD OF THE CLASS

The Rust Belt state and center-right presidential bellwether is the nation's unlikely green schools leader. Here's how it happened. <http://plus.usgbc.org/head-of-the-class-2/>

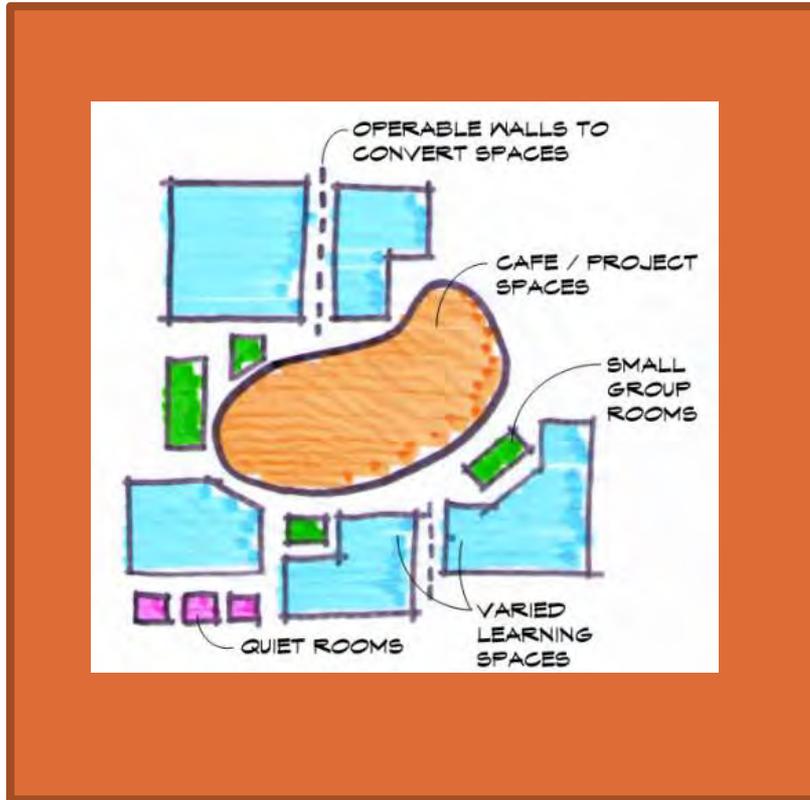
Educational Visioning Process

6 - 8 Months Before Approval to Fund



New Boston Local SD
New PK-12

COLLABORATIVE LARGE GROUP SPACES / PROJECT SPACES/ INDIVIDUAL SMALL GROUP SPACES / INDIVIDUAL STUDY SPACES / BREAK-OUT SPACES / QUIET ROOMS



⦿ ATTRIBUTES

- Flexibility
- Comfort
- Ambiance
- Technology/Connectivity
- Places

⦿ PLANNING CONCEPTS

- Varied in design
- Flexible
- Small and large
- Reconfigurable
- Soft and hard seating

Educational Visioning Process

Process is vital to educate and ensure that the Board, Administrators, Teachers & Community will design to their educational needs.



Dining & Outdoor Dining
Outdoor Learning Area





ELA



Botkins K-12
Classroom Space

Needs a Champion to ensure spaces are used to their maximum potential.

Media Center



BEAVER LOCAL SD



Flexibility of Space
Variety of Movable Furniture



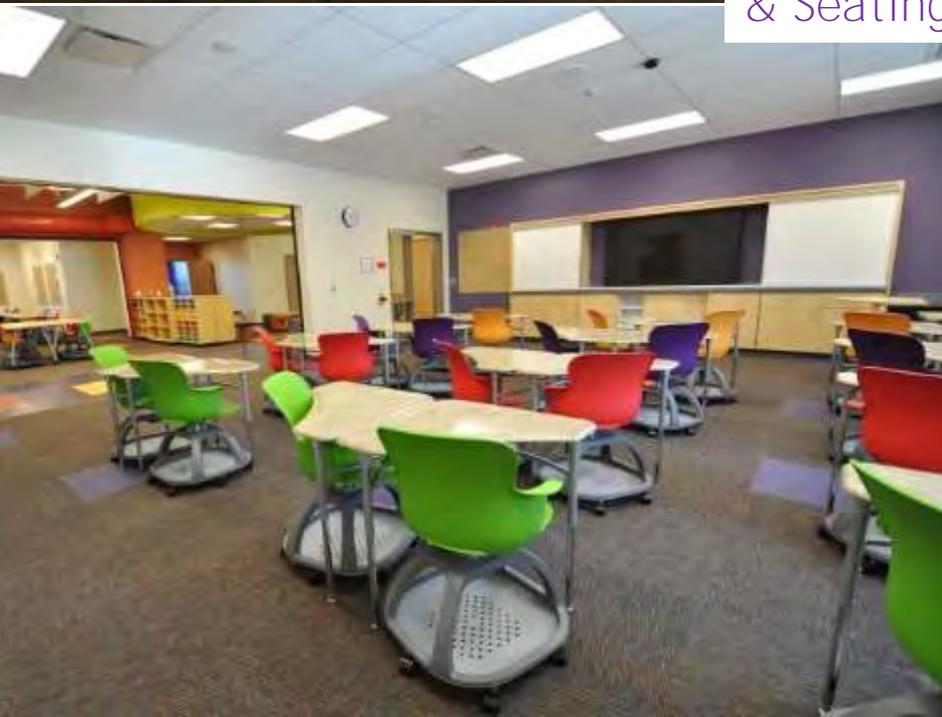
Teacher & Staff Buy-In
Team teaching
Project Labs & Classroom Space

Accommodates different
learning styles & unique learning
opportunities





Various Configurations
& Seating Choices





Flexible, durable and portable furniture is vital to success.

Highland Local SD
Highland High School

Right: Extended Learning Area -
walls open

Bottom: Walls and doors become
writing area



Teachers and staff must be able to move the walls and furniture on their own without a lot of hassle.

Dalton Local SD
Elementary/Middle



Cafetorium



Media Center Hallway
Extended Learning Areas
Large Group Assembly



Dalton Elementary/Middle



Gallipolis Local SD
Green Elementary

Media Center



Green Elementary
Interior Room - ELA



Science Lab



Cafeteria



Media Center/Computer Lab



Morgan Elementary

Piqua City SD
Piqua Elementary School



Media Center



Extended Learning Area



Extended Learning Area

Southwestern City SD
Harmon Elementary



Media Center



Shelby City SD
New High School

Dayton Regional STEM School
(Serves multiple districts)





Dayton Regional STEM School



Questions?



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*Leading the
Nation in Green
Schools*

THANK YOU!

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Columbus City SD
Old Orchard Elementary