

Improved Learning with Daylighting

Solatube Daylighting Systems in Education





CASE STUDY

LEED, Better Building Challenge

ALLEGHENY COLLEGE

“Not only have the Solatubes contributed to the renovation’s LEED Gold certification, but they’ve helped us in our efforts to achieve 20% building efficiency.”

— Kelly Boulton, Sustainability Coordinator

DOWNLOAD CASE STUDY
bit.ly/SolatubeLEED



Fueling Student and Staff Achievement

It’s proven that a school’s indoor environment has a significant impact on student learning and staff effectiveness. In fact, studies have shown that about 55 million students attend schools that are so unhealthy, it inhibits their learning.

Daylighting, a key strategy for improving school environments, does more than brighten up a space. It has been shown to improve concentration, reduce behavioral issues and foster greater student achievement. It also promotes lower student absenteeism and higher faculty retention. And that’s just the beginning.

A+

Better Test Scores: In environments with the greatest amount of daylight, students progressed faster on math and reading tests over the course of a year than students with access to the least amount of daylight¹.



Improved Focus: Daylight can also help regulate students’ circadian (sleep/wake) cycles. Exposure to daylight helps keep the circadian system in balance, so students are more alert and focused in the classroom².

26%

Quality Matters: Daylight quality can impact student achievement on tests. One study³ found that students performed up to 26% better on standardized tests when exposed to the most diffused daylight with the least amount of glare.

Attain Higher Certification and Funding

These combined benefits can help schools achieve LEED accreditation, earn Collaborative for High Performance Schools (CHPS) credits, and meet the Better Buildings Challenge requirements – all of which can help when competing for funds.

■ **Comply with safety and health codes** for fire, high-speed wind and Occupational Safety and Health Administration (OSHA) codes.

■ **Improve student health and performance** with exposure to diffused daylight that enhances concentration and mood, reduces eyestrain and headaches, and leads to better test scores and attendance.

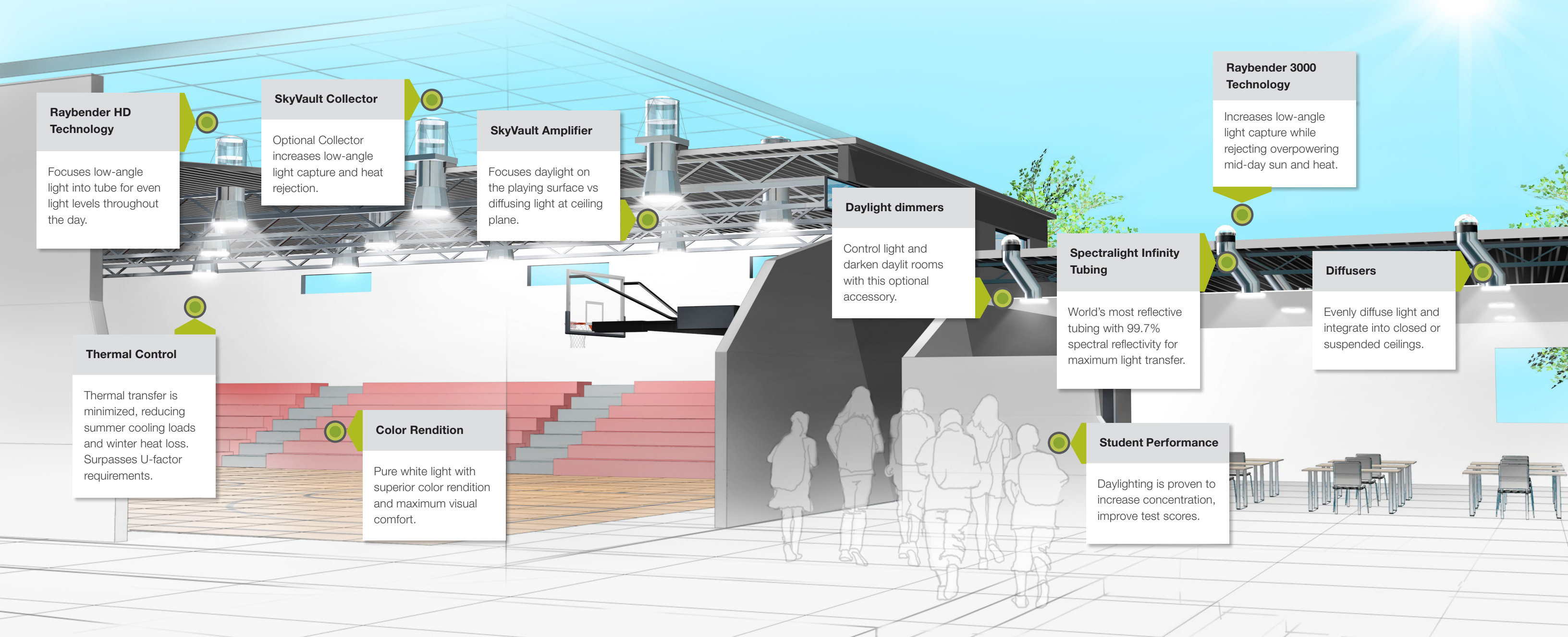
■ **Cut operating costs and carbon footprint** by displacing the need for electric lights during the day, eliminating the heat they generate and reducing cooling loads.



By reducing our energy costs, we can put the money we save to work in the classroom where it belongs.

— Stu Reeve, Energy Manager, Poudre School District





Raybender HD Technology

Focuses low-angle light into tube for even light levels throughout the day.

SkyVault Collector

Optional Collector increases low-angle light capture and heat rejection.

SkyVault Amplifier

Focuses daylight on the playing surface vs diffusing light at ceiling plane.

Daylight dimmers

Control light and darken daylit rooms with this optional accessory.

Spectralight Infinity Tubing

World's most reflective tubing with 99.7% spectral reflectivity for maximum light transfer.

Raybender 3000 Technology

Increases low-angle light capture while rejecting overpowering mid-day sun and heat.

Diffusers

Evenly diffuse light and integrate into closed or suspended ceilings.

Thermal Control

Thermal transfer is minimized, reducing summer cooling loads and winter heat loss. Surpasses U-factor requirements.

Color Rendition

Pure white light with superior color rendition and maximum visual comfort.

Student Performance

Daylighting is proven to increase concentration, improve test scores.

The Push for Greener Schools

Schools today have more on their agenda than educating students. Pressure to reduce operating costs, improve carbon footprint, and provide healthier indoor environments has fueled the push for green technologies.

**20x
ROI**

While constructing a “green” school can cost on average 2% more than a conventional school, the return on investment is about **20 times greater**. Savings can be realized through reduced operating expenses, lower student absenteeism, and increased employee retention.⁴

Often “green” means maximizing what nature provides. Solatube Daylighting Systems aggressively capture daylight, streaming nature’s light source into classrooms, halls, libraries, offices, and gyms. And since daylight is proven to increase test scores and attendance, it helps achieve building and education goals. Interestingly, it’s human performance factors like these that often directly impact school funding.

FOR AN INTERACTIVE EXPERIENCE GO TO:
Solatube.com/commercial/education



CASE STUDY

Net Zero Modular Classrooms

BRENTWOOD SCHOOL

Solatube Daylighting Systems in high-performance Gen7 modular buildings helped the Brentwood School earn LEED Gold Certification and standing as the first Net Zero prefabricated school in Los Angeles.

WATCH THE VIDEO
bit.ly/ModularClassrooms



CASE STUDY

Interior Gymnasium

WESTSIDE CHRISTIAN HIGH SCHOOL

"In addition to providing such incredible natural light and reducing energy use, the Solatube units are attractive and fit into the overall ceiling structure in such a way that they enhance the beauty of the space."

—Dr. Deborah Miller, Head of School
Westside Christian High School

DOWNLOAD CASE STUDY
bit.ly/WestsideChristian



SEE OUR SKYVAULT DAYLIGHT DIMMER IN ACTION:
solatube.com/skyvaultdimmer

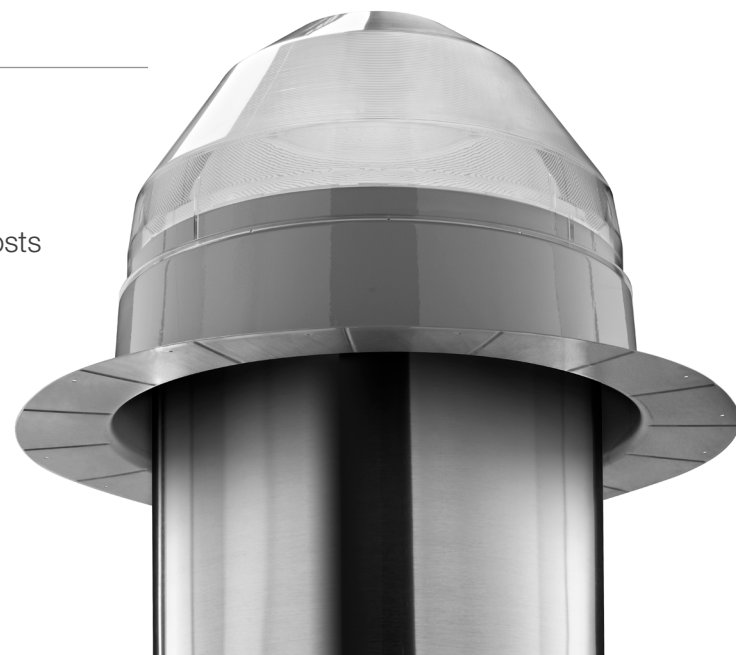


Solatube Innovations

Solatube Daylighting Systems feature innovative optical technologies that balance light output and thermal performance, delivering optimal light levels without uncomfortable heat gain, glare, or shifting patterns of light.

Our unique design also minimizes impact on the building envelope, allows for easy integration with electrical lighting systems, and eliminates ongoing maintenance. The result is a cost-effective and energy-efficient solution that brings daylight to previously unreachable spaces—like interior classrooms, gymnasiums, and windowless libraries.

- **Selective optics maximize light capture** and output so students and teachers can see their work clearly
- **Significantly cut electricity** for lighting to lower energy costs
- **Filter heat-producing infrared wavelengths** to keep temperatures comfortable and decrease cooling loads
- **Block ultraviolet light** to prevent skin damage and fading of furniture and fabrics



How it Works

Capture



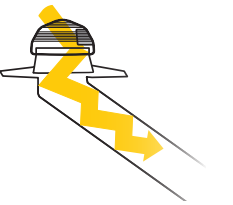
Solatube's patented Raybender Technology: Increases low-angle light capture, rejects solar heat and mid-day sun.



LightTracker Reflector: Maximizes low-angle light.

Transfer

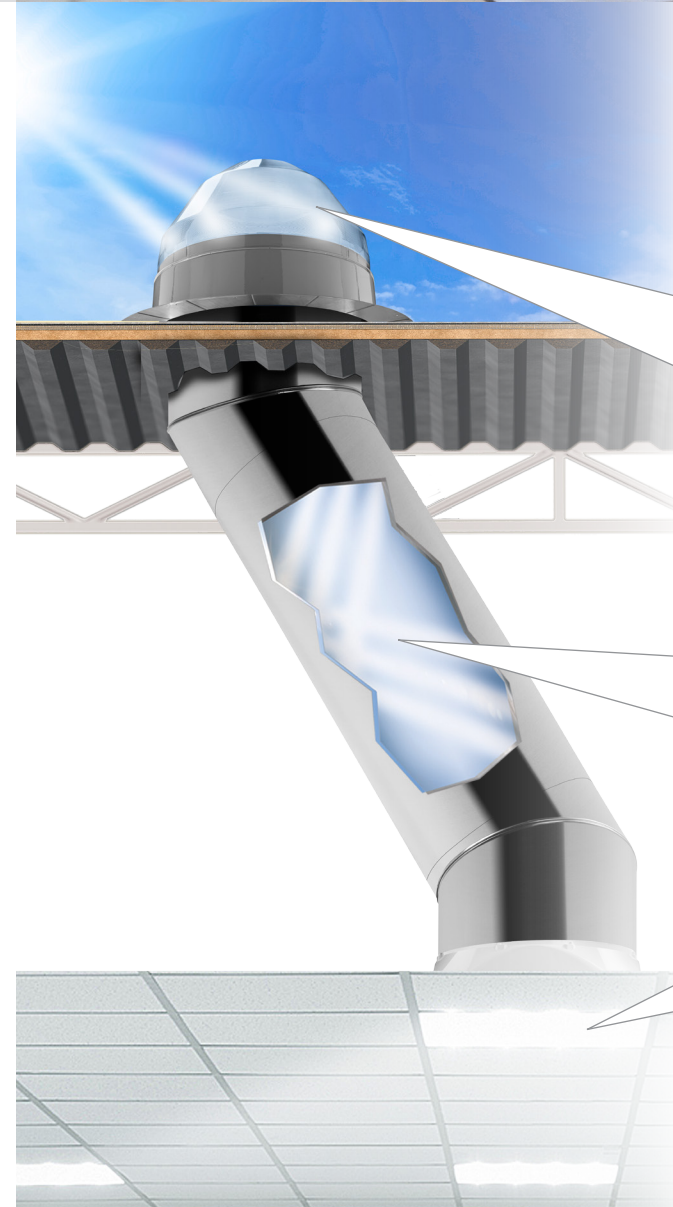
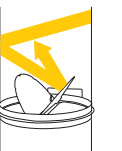
Solatube Spectralight Infinity Tubing: 99.7% specular reflectivity for highest light output.



Deliver and Control

Diffusers: Minimize glare, deliver even lighting.

Dimmers: Darken rooms to near blackout.



Solatube Certified Commercial Distributors provide full support for every project phase - from design to spec writing to installation by factory-trained technicians. With exclusive access to the Solatube Design Calculator, an advanced tool for daylighting analysis and planning, they can help you create the right design for every school project.

CONTACT US
1-888-SOLATUBE



Solatube Product Lines

Gymnasiums/ Cafeterias



SkyVault Series
M74 DS Core



SkyVault Series
M74 DS with Amplifier



SkyVault Series
M74 DS with Collector



SkyVault Series M74 DS
with Amplifier & Collector

Classrooms/ Offices/ Locker rooms



SolaMaster Series
750 DS Closed Ceiling



SolaMaster Series
330 DS Closed Ceiling



SolaMaster Series
750 DS Open Ceiling



SolaMaster Series
330 DS Open Ceiling

Corridors/ Restrooms



Brighten Up Series
160 DS



Brighten Up Series
290 DS



Solatube Smart LED

Visit solatube.com/support/technical-resources on our website if you are looking for specifications, CAD drawings, BIM, installation instructions, cut sheets, approvals or other related information.

Sources

- 1 - Spector, M. (2012, May 1). Acoustics and Daylighting. School Planning & Management, Alberta Education report titled "A Study into the Effects of Light on Children of Elementary School Age"
 - 2 - Leslie, R. (2010). Patterns to Daylight Schools for People and Sustainability. Lighting Research Center
 - 3 - The Benefits of Daylighting. Northwest Energy Efficiency Alliance
 - 4 - Katz, G. (2006, October). Greening America's Schools. The U.S. Green Building Council.
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