

# School districts seeing benefits of natural light

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The Press-Enterprise

School districts across the Inland area are seeing the light.

Concerned about energy costs and aware of studies that show natural light can help students perform better, Inland districts from Corona-Norco and Riverside Unified to Beaumont and Coachella Valley unified, are opting for a concept called "daylighting." It can include placing skylights and strategically located windows in classrooms to draw in natural light.

It's not only traditional students who can reap the benefits of sunlight streamed through a louvered skylight or a glazed window, however. Special-needs students particularly benefit from a fluorescent-free environment, teachers said.

## A Calming Effect

In several classrooms at Beaumont Unified's Brookside Elementary, a skylight splashes a pool of soft white light across the center of the room. Fluorescent lights form a square around the room's perimeter, but the skylight dominates the center.

Shannon Eckert's second-grade students describe the shape as a pyramid, an envelope or a diamond. One, Cathy DiJohn, said it felt like a cloud. Julissa Mejia said it resembled "a big lamp."

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**Rodrigo Peña / The Press-Enterprise**

A skylight in the Brookside Elementary library in Beaumont illuminates librarian Holly Litka as she reads a story.

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Whatever it is, the skylight helps when Eckert uses the overhead projector, she said. Thursday, the students sat on the floor near the back wall for reading time, the skylight offering a soft white glow nearby.

"This is just enough light (so) they can still see stuff," Eckert said. Just then, a cloud passed over, and the room darkened.

"God said, bye bye, light," second-grader Jaymee Rhodes said.

Across the school, the skylight is the illumination of choice for Susan Echlin's special-needs day class.

The natural light helps keep the children calmer, which is important for moderately to severely disabled children, Echlin said. Autistic children in particular are bothered by the buzz from fluorescent lights, their sensitive hearing assaulted and their moods upset, Echlin said.

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Joey Poltz lines up dominoes while bathed in natural light in his special-needs class.

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"Anything we can do to avoid the overhead lighting," Echlin said.

### Testing Gains

Natural light may help with more than moods, according to a 1999 study by the Heschong Mahone Group, an architecture consulting firm based near Sacramento.

The study, including more than 21,000 elementary students in Colorado, Washington state and Orange County, concluded that the California students with the most daylighting in their classrooms saw their reading test scores improve 26 percent more than the students with the least daylight, and their math scores increased 20 percent more.

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**Rodrigo Peña / The Press-Enterprise**  
A skylight splashes the center of Shannon Eckert's class at Brookside Elementary with natural light. "This is just enough light (so) they can still see stuff," Eckert says.

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The Washington state and Colorado students with the most daylighting had 7 percent to 18 percent higher test scores than students with the least, the study showed.

Daylighting was the primary form of illumination in California schools until about the 1960s, especially the "finger plan," with rows of classrooms that have windows on both sides, Susan Oldroyd wrote in a report on the Architectural Record Web site. The state Department of Education even had daylighting standards for construction, her report indicates.

Daylighting waned amid the rise in air conditioning and designs emphasizing tighter room configurations that minimized or eliminated daylighting, Oldroyd's report states.

### **Looking Ahead**

If Inland schools are any indication, daylighting is on the rebound. Many Inland districts are building skylights and window designs into their new schools, despite perceived drawbacks such as cost, leaks and vandalism.

School planners say the benefits outweigh the costs, and the increased costs aren't necessarily steep. One national study of 30 schools in 10 states, called "Greening America's Schools: Costs and Benefits," concluded that "green" schools cost 1.7 percent more to build than conventional schools, with features beyond skylights or more windows.

Kirk Lewis, Riverside Unified's assistant superintendent of operations, echoed other Inland districts in declaring that "daylighting is now an ongoing practice we're using," with planners aided by computer modeling software that can suggest ample daylighting.

Fontana Unified, the beneficiary of a \$275 million bond measure, has several new schools planned, including a new high school with narrow, ceiling-level clerestory windows, said Melinda Pure, the district's director of facilities planning, design and construction.

Concerns remain. Richard Beck, Hemet Unified's assistant superintendent of business services, lamented the vandalism that windows seem to bring, while Dale Saugstad, Beck's counterpart in Corona-Norco, said skylights have been known to leak. Heat is a problem in Coachella Valley Unified, and the district compensates with light-diffusing ceiling panels in the skylights at its two newest schools, said Elsa Esqueda, the district's director of facilities, planning and construction.

None is deterred, and the quest for daylighting continues.

In Beaumont, the skylight's soft glow reveals Echlin's special-needs children quietly arranging dominoes, pacing or just sitting quietly. Inside, the sunny Thursday is largely masked, and Echlin is grateful for the skylight.

"Even more would be better," she said.

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#### **finding daylight**

Many Inland districts utilize daylighting in K-12 schools, with a special emphasis on new schools. Districts include:

Riverside Unified

Fontana Unified

Corona-Norco Unified

Hemet Unified

Coachella Valley Unified

Beaumont Unified

SOURCE: Individual districts

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