



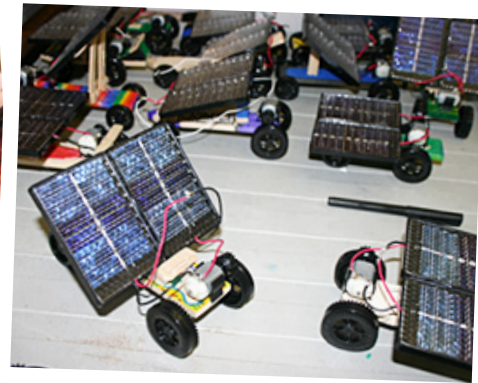
green TECHNOLOGY

strategy and leadership for clean and sustainable communities

Fast Tracking Change:

by Racquel Palmese

Irvine Unified School District



The green schools movement is still in its infancy, but already school districts are realizing major cost savings through energy efficiency, water conservation and other green applications. Suddenly, school board members, school district superintendents, facilities managers and curriculum directors find themselves on a frontier full of opportunities and risks. They are taking a crash course in things that once may have seemed arcane, like power purchase agreements, energy audits, cool roofs and British thermal units. It's no academic exercise; they feel compelled to learn about the technologies that will save money, lower their districts' carbon footprints and bring their schools, their students, faculties and their communities into a new era of awareness about global, and local, environmental challenges.

The Irvine Unified School District in Orange County, California, has taken on the challenge by renovating and building green, as well as thoroughly integrating what they

are doing into their curriculum. In a short 14 months, they have saved hundreds of thousands of dollars on their utility bills by carefully monitoring electrical, water and gas usage and by implementing behavioral changes throughout the district. Even as they add more electricity-consuming equipment, such as white boards and laptops, they still manage to keep lowering usage.

IUSD has just opened the doors to their first CHPS (Collaborative for High Performance Schools) certified high school. The school board has passed a resolution under which all future schools in the district will meet CHPS standards. District staff have traveled to Europe to study green initiatives there.

And they are just getting started.

Experimenting with Technology

The Irvine school district has 27,000 students, 38 schools spread over 544 acres and about 2,000 employees. But the statistic that excites the district's school board, its super-

intendent, maintenance and facilities people, and the math and science curriculum director is its 2.5 million square feet of roof space. This is prime territory for solar installations, and solar means saving money on electric bills. In a time of tight budgets, this is money that can go into the general fund to be used in classrooms for supplies and for teachers.

What started out as an experiment to put a solar panel on the roof of one of the district's middle schools has burgeoned into a "mega" power purchase agreement covering major solar installations not only on that one school roof, but eventually on 18 schools. Mark Sonntag, curriculum coordinator for math and science at IUSD, is spearheading the integration of energy efficiency, water conservation and other green programs in the district into the curriculum. "The projections are that the solar panels will mitigate about 40 percent of IUSD's annual electric bill," he says. What he especially likes is that "from the curriculum side, the monitoring will be in real time on the

Internet, and there will be a kiosk in the lobby at the district offices.”

Leadership from the Board

Fourteen months ago, the school board took the unusual step of setting up a subcommittee to study greening the district. It included two board members, the superintendent, the maintenance and operations manager, the curriculum coordinator and various outside experts. Sontag is a member of the subcommittee.

“The school board’s vision is a really critical piece,” he says. “You can get trapped by analysis and never pull the trigger on anything. I think one of the things I appreciate the most about the leadership here is its attitude of ‘let’s do something.’ If we find out that we could have done it better, we’ll make adjustments as we go, but it’s better to try something and work towards getting it right than waiting to have it perfect.”

School board member (and past president) Michael Parham believes a strong green mandate is essential. “I’ll say it bluntly, it’s not really about green and saving the planet. It’s about being efficient and saving money. That’s how I operate. I’m an investment banker, and the world has changed. The market for energy has changed substantially, and if we don’t do something to address this there will be an increasing cost to us.”

Parham says that the efforts that went into evaluating the solar panel project, combined with federal stimulus dollars that became available and commitments by the financing community all came together at the right time. “Now, instead of one experimental solar panel, we’re [putting solar panels on] the entire school with a funding mechanism that is fantastic. We wouldn’t have that if we just sat on our heels and waited for someone else to do it. We have to push the envelope, and that’s what our team at the school district has done - we found a way to do it. Now that we’re doing one, it’s going to be like a house of cards, we’ll be able to do a lot more of these.

“Even if it doesn’t pencil out to be that much more beneficial financially, as long as it’s not negative, let’s just do it,” says Parham. “I think that’s how you have to do it in California; you have to shoot first and ask questions

later. The whole system is changing, and the people who tell you this or that is not allowed, frankly they’re out of touch with what the governor and what the population is saying.”

Parham says that in the next ten years or so the school district needs to spend over \$100 million in modernization of its buildings, “plus new high schools, new middle schools, everything. If we’re going to go out and spend \$200 or \$300 million, let’s be as cutting edge as we can. I am not going to put my name on a school that is not cutting edge by the time it’s built. It’s not about new fangled gadgetry, it’s about doing our jobs, being good fiduciaries.”

Another integral part of the success of the district’s green building and other projects is the business services department. “They rightly have a view how each thing pencils out, so we’re not putting the district’s funds at risk,” says IUSD Superintendent Gwen Gross. “There are no guarantees ever, but at least we’ve done due diligence in terms of looking closely at all aspects. Our CFO is correctly conservative about these things and needs to be convinced. She brings that element into the conversations and asks the difficult questions of the providers. I think we get a better product because of that. It is pretty much of a district-wide initiative that you have people from different parts of the organization involved when it’s appropriate.”

Conservation Pays Off

Joe Hoffman, the district’s director of Maintenance and Operations, has been documenting energy usage month by month and school by school. According to Gross, he started doing it because he was interested, but his statistics revealed something that confirmed the district’s growing interest in energy efficiency and conservation.

“We now have about a year and a half worth of data,” she says. “It shows that just by implementing common sense energy efficiency measures and changing behaviors among teachers, staff and students, without purchasing new equipment or allocating any additional personnel” the district reduced its electric consumption 5.9 percent in the 2008-2009 school year over the previous year. That led to a dollar savings of 3.3 percent, or

\$132,965 – money that went directly into the general fund. Even more impressive was the overall utility savings, counting electricity (3.3 percent), gas (40.4 percent savings) and water (11.8 percent) of \$286,564. This was thrilling to the school board.

Says Sontag, “The savings are real dollars and these are real savings, because there isn’t an offsetting additional expenditure. Another thing is that Joe has forged good relationships with the providers of our services over the years. Utilities like Edison or Sempra or the water district let us know when any of our schools might roll into some rate reduction program in a certain period. Those kinds of partnerships are very valuable.”

Partnerships abounding

A major focus of the district’s vision is developing community and municipal partnerships to expand projects. Some on the long list of partners involved in the district’s green initiatives include the Energy Coalition, the City of Irvine, the Irvine Company (developers), Irvine Valley College, U.C. Irvine, Edison, Sempra, Irvine Ranch Water District, SPG Solar, WindTerra, Siemens Solid Oxide Fuel Cells, Durham School Transportation. Each of these partners has an active role in helping the district move forward with its green projects and programs and in keeping the district informed about technological advances.

An example is the Energy Coalition, a group of municipalities including Irvine, Brea, Santa Monica, Palm Desert and others, investor owned utilities - Edison, Sempra, PG & E - and the Public Utilities Commission. The IUSD is the first school district to become a member of the coalition.

The idea, says Sontag, is “to work collaboratively on local issues, to form partnerships with the utilities and other entities.”

The most unique partnership is the one the district has with the Irvine Company, the major housing developer in the city. Gross explains: “They sell us the land [for our schools] and together we work with builders to build them. In fact, I just heard that there will be 18 brand new housing developments that will be launching in Irvine next month. This is amazing – 18 new communities!”

The Irvine company works with the school district to form a Mello-Roos Community Facilities District, a CFD. The CFD provides an alternative way to finance projects in California, where Proposition 13 limits the amount of property tax that the state or cities can charge residents, drastically limiting money for education. With a Mello-Roose CFD, a special tax lien is placed against each property in the CFD. Property owners then pay a tax each year. If the project cost is high, municipal bonds are sold by the CFD, and the tax continues until the bond is paid off.

"The first thing that happens in a new development," Gross continues, "is that we build a school, and then the community is built around the school. That's been the long history of the City of Irvine. The CFD money comes right into the district's coffers, and that's what we use to build our schools. We've been doing it this way for 35 years."

Another interesting partnership is with the Irvine Chamber of Commerce, which Gross says is very supportive of green projects and of the district's initiatives. In a city with a major university (U.C. Irvine), and many high-tech companies, this isn't surprising. There's a lot going on at the university as well, she says, and Sontag is involved with their science and math professors.

"The National Fuel Cell Research Center is at UCI," says Sontag, "they've been a wonderful resource for our students and for us. We have a new pool going in and a fuel cell was one of the things we thought of to power it. But they helped us understand that a pool goes on and off and fuel cells are better when they're on and not on and off. It's all part of our education process, it all keeps us from launching into things that could turn out to be mistakes."

Educating the Educators

Educating themselves was the first challenge. Besides attending conferences, such as the Green California Schools Summit, where they talk to vendors and attend and present during the education programs, the superintendent, school board members and others from the district traveled with the Energy Coalition to Europe to study green

schools efforts in various countries.

"I was in Denmark and Sweden," says Gross. "We study those countries so that we can learn. Energy conservation is one of their greatest assets. If you want to really have assets, start going green – that's a theme all over those countries. There's such a natural acceptance. It was really exciting to be there and to see how far we still have to go. But at least there are some great ideas of things we can launch.

"None of us understood any of this," she continues. "A year ago these words were all Greek to me. I had to ask what they mean. I think sometimes people fear doing that. Anything that's sort of high-tech we shy away from if we don't feel like we have a natural proclivity. But the real message is preservation. We have many examples of it in our world. I think the greatest thing is that the students are excited about it."

The district depends on vendors to help provide the much needed education. "We've got to stay on top of all this," says Gross. "If you get behind, you're even in worse shape. I think there's a realization on the part of some of the vendors that they are in a building stage. They've got to develop real relationships with school districts, so when the districts are able to get some funding through local bond measures or a state bond - school bonds are passing everywhere – the districts will contact them. They've got to stay in the loop, especially all of the green people, because that's what school districts are going to be going towards."

Sontag agrees. "I think what probably isn't apparent to the vendors is that what they are doing for us is a lot of education that we need right now. I didn't know anything about this 14 months ago. At last year's Summit I walked the exhibit hall with our facilities manager. We'd talk to Borrego Solar, and they would give us some piece of information. Solar Monkey would be the next one we talked to, and we'd take what Borrego told us and we'd go a little further with Solar Monkey. Solar



An aerial view of the proposed solar installation at Rancho San Joaquin Middle School. Under a "mega" power purchase agreement, the district went from experimenting with installing one solar panel on one school to full rooftop installations on 18 schools.

Power Partners - I must have talked to them for a half hour just trying to understand some of the basics of power purchase agreements and how those work. Chevron was there, and in fact after we saw them, they came out and made a presentation to us. Are they going to realize a check or an order as a result of being there, probably not the day of, but the relationships get built there."

Setting the Stage for the Future

This is Gross' fourth year at the district. "When you get direction from the board that this is something that is a high priority, it's easy to run with," she says.

"It's exciting too, because kids know - I've seen a lot of studies with young children, and when you ask them what they worry about, they worry about the world. They worry big picture. I think part of it is that you start thinking about what are you going to leave in a district, what do we have to do in this district moving forward. We're pretty solidly clear about our curriculum, the budget we just deal with in the ways that come to us. But in terms of really setting the stage for a solid, sustainable district, we have got to put this in place." 🌱

