

# Profiles in Savings By Design: Church's Energy Performance is Inspiring

Being a good steward of your resources is part and parcel of many religious paths. It also makes sense from a purely practical standpoint, as the Rock Church & Academy can attest. The church just completed a 206,000-square-foot sanctuary/school building that's designed to perform 22.1% better than required under Title 24, California's minimum energy-efficiency requirements.

The church will reap ongoing savings of approximately \$83,300 every year at current energy prices due to upgrades designed to save 521,154 kilowatt-hours of electricity annually - enough to power 85 homes for a year. In addition, San Diego Gas & Electric® paid one-time Savings By Design incentives totaling \$92,542 - a design team incentive of \$23,006 plus an owner incentive of \$69,536.

At first, budget constraints made the owner and project team hesitate to incorporate any of SDG&E's recommended improvements. That reluctance faded, however, once the long-term benefits became clear.

## Cost-benefit scenarios help you decide

"I think the easiest way for owners and architects to immediately realize the significant benefits of the Savings By Design program is to look at the cost-benefit scenarios that SDG&E® creates," says Harvey Rogoff, project manager for Harper Construction Company Inc., San Diego, which led the design/build project. "Marianne Sy, our SDG&E rep, was very cooperative in giving me scenarios with different combinations of energy upgrades, so I had every possibility in front of me before meeting with the owner. I thought there would be options in the middle ground, but when we checked the numbers, it was clear that the best equipment was by far the most cost-effective, even though it was also the most expensive. It proved for me that it was the best choice for the owner."

## Energy-efficient systems incorporated into the project included:

- Premium-efficiency water-source heat pumps.
- A heating hot-water boiler rated at 80% efficiency.
- High-performance glazing with a solar heat gain coefficient (SHGC) of 0.380.
- Lamps and ballasts that contributed to an overall lighting power density of 0.572 watts per square foot, which is 53% better than required by Title 24.

The team started with an existing building of poured-in-place concrete and demolished half of it in order to build an 89,000-square-foot sanctuary akin to a 3,500-seat concert hall. After demolishing the exterior walls of the other half, the team remodeled the three-story skeleton into a 116,000-square-foot school for grades K-12. The resulting facility, located in the Liberty Station redevelopment community in Point Loma, opened in August 2007.

In addition to Rogoff, those who contributed to the energy efficiency of the Rock Church & Academy included: architects Andrew P. Cohen, FAIA, executive director, Scott Kaufman, project principal, and Wendi Gilbert, assistant project manager, Gensler, Santa Monica; HVAC designer/builder Dave Nelson, Industrial Commercial Systems, Vista;

electrical designer/builder Isaac Altman, Helix Electric, San Diego; Bob Cloyd, project manager, the Rock Church & Academy; and Marianne Sy, account executive, and Roger Yamasaki, PE, senior engineer, SDG&E.

## Incentives of up to \$200,000 per building

Savings By Design incentives of up to \$200,000 per building are available to offset the cost of exploring and investing in energy-efficiency upgrades for commercial new construction projects. To learn more about incentives, technical assistance services and training opportunities, visit [www.sdge.com/savingsbydesign](http://www.sdge.com/savingsbydesign) or contact your SDG&E representative early in the design phase of your next nonresidential new construction project. Savings By Design is one of the ways that SDG&E is developing energy solutions to help the region.

by Chip Fox, Manager  
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Savings By Design incentives topped \$92,500 for the Rock Church's new sanctuary and school, and ongoing energy savings are estimated at \$83,300 per year at current energy prices. High-performance glazing (shown here at the sanctuary entrance) contributed to overall energy efficiency that's 22.1% better than required by law. (Photo by Lonnie Seidler, courtesy of the Rock Church.)

## Abraham Katase

Architectural Designer and Illustrator, is available to provide elaborate renderings for architectural presentations, marketing materials and design analysis using new, advanced computer graphics, 3D images and hand rendering.



## ARCHITECTURAL CONCEPTS

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