

CASH Conference:

Newport Coast Elementary School

Architect: Perkins & Will
(Pasadena Office)
Gaylaird Christopher, AIA
Principle In Charge

Location: Newport Coast, California

Budget: \$7.6 Million

Square Footage: 42,000



- Joint Funding from DOE
- Daylighting Control
- Natural Ventilation
- Building Envelope Optimization
- High Efficiency Air-Conditioning
- Demonstrating High Level Skills for this Expanding Market Segment
- Project Likely to be Conditioned with Electrical Equipment
- Buildings that Teach
- 40% Below Title 24
- Cost Competitive to Design and Build

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- Energy Efficiency and Sustainable Schools
 - Newport Coast Elementary School
 - 1st Collaborative for High Performance Schools (CHPS) certified school
 - School is a K-6 campus
 - Began construction in 1997 and was built and ready for occupancy in 2001
 - 43% better than Title 24
 - Remained within the State Allocated Budget

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- Several Unique Features

were included in this school:

- Exterior corridors and classrooms clustered around courtyards
- Operable windows for cross ventilation in classrooms with exterior walls on opposing sides
- Operable windows and fan-assisted ventilation in back-to-back classrooms
- Exterior sun shading of glazing
- Interior and exterior light shelves for daylighting
- Sectional molding of ceiling plans for improved daylighting distribution
- Increased roof and wall insulation

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- More features:
 - High-efficiency, direct/indirect fluorescent lighting with multilevel controls
 - High-efficiency heat pumps
 - Solar collectors for preheating domestic hot water
 - Drought tolerant landscaping

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- Tools utilized in the development of the new school:
 - Detailed energy modeling using DOE-2
 - Natural Ventilation Studies using a graphical airflow visualization technique
 - A “green” materials matrix addressing environmental and indoor air quality
 - Physical Daylighting modeling zz











CASH Conference:



- Programs and Resources available to school districts
 - Savings By Design
 - Express Efficiency
 - Standard Performance Contract Program
 - CEC Programs
 - Several others
 - Collaborative for High Performance Schools
 - Best Practices Manual
 - M&O Manual