Daylighting a Green High School

Smart Schools Symposium 2013
American Canyon HS

- 2,200 Students
- 260,000 square feet
- Highest scoring CHPS Verified School in CA
- Daylighting a major focus of sustainable design strategy
- Began design in 2005, opened in 2010
Classrooms

- Variety of configurations and orientations
- First and second story
- Goals:
  - best daylighting possible
  - flexible lighting system
  - simple and cost effective
Sun Control Glazing

- Provide exterior sunshades for lower windows
- Translucent daylighting glazing for upper windows
- High performance glazing and window systems
- Standard design used throughout the campus
BIM BASED ANALYSIS TO INFORM DESIGN DECISIONS
Lighting System

- Direct-indirect linear fluorescent fixtures
- Dedicated fixture for whiteboard/screen
- Switching and controls for daylight harvesting
- Dual Technology Occupancy sensors
Multi-purpose Room

- Large open space with high ceilings
- North clerestory glazing
- South curtain wall
- 36 large tubular skylights
- Fluorescent lighting with daylighting controls
Multi-purpose Room looking northeast
Administration Hallway

- Long central corridor with entries on east and west
- Translucent skylights
- PV Glazing for sun control on east and west facades
- Fluorescent lighting with daylighting controls
User Education

- Daylighting controls only work if the staff knows how to use them.
- Training and education of school staff on how and why to use controls is important.
- Opportunity for student involvement.