Solar and Roofing Project
San Mateo Union High School District
Firm History

- Celebrating our 25th year in 2011
- 1,000+ Projects, almost $1 Billion in School Facilities
- Staff of 50 capable of handling projects of all sizes
- Commitment to Sustainable Design
- Focus in Renewable energy with ~10 megawatts in Solar projects for CA School Districts constructed or in Development
Project Background

- District began looking at solar in early 2010
- Primary goal was General Fund Relief
- Lower Construction Costs resulted in surplus funds in Bond Program
- Evaluated many financing and delivery method options
- Project will deliver $7.8 million in savings to the General Fund over the next 5 years
Why Roof Mount?

- Normal Concerns with Roof Mount at schools:
  - Structural capacity of building
  - Age of Roof
  - Roof Configurations

- San Mateo UHSD Conditions:
  - Large, flat roofs, with adequate structural capacity
  - Need for new roofing membrane
  - Poor options for ground or structure mounting
  - Wanted to keep open land for future flexibility
Preliminary Design

- QKA, Greystone West and Sage Renewables evaluate school sites
- Recommended array locations and estimated production and savings presented to the Board
- Cost of Solar System and Roofing estimated
- Additional requirements identified such as monitoring kiosks, performance guarantee, and solar curriculum
Contractor Selection

- 3 Bid Packages:
  - Re-Roofing
  - Site Electrical
  - Solar Installation

- Solar Contractor selected through Design-Build RFP

- Received 4 competitive proposals

- Sunpower is selected Solar Contractor

- QKA serves as Architect in Design-Assist role
Roofing Design

- EPDM Roofing Selected for the following reasons:
  - Long lasting product to match length of PV installation
  - Ability to effectively accommodate a large number of penetrations.
  - Warranty for areas of standing water
  - Numerous complicated details that were designed with the help of Firestone and District Roofing Consultant
  - Nearly 500,000 SF of roofing
Solar Design

- Sunpower designed final locations, configurations and layout of the arrays
- QKA reviewed and coordinated work
- QKA coordinated the locations of stanchions with roofing project and structural supports
- Sunpower designed roof mounted racking systems
- One project submitted to DSA for approval
Roofing Installation
Roofing Installation
Solar Installation

Tuesday, April 19, 2011
Solar Installation