San Francisco Art Institute – Fort Mason
An historic Army pier converted to a school for the arts
Cross Section: Key Measures of Sustainability

- 100% On-Site Renewable Energy Provides all Required Electricity
- 23 kBTU/SF-yr Energy Use Intensity
- 83% Energy Reduction Meets AIA 2030 Commitment
- 75% Building Reuse/Embodied Energy
- 32% Water Reduction

1. Daylight Light Monitor
2. Historic Structural Tusses
3. 55 kW Solar Photovoltaic Array
4. Efficient Refrigeration Pans
5. Increased Supply Ventilation Air
6. Low Level Enthalpy Reheat Control
7. Operable Window Shades
8. Hydronic radiant heat floor heating system
9. Historic Pier Structure

"Reduction of global warming potential of materials only"
THERM: FREE LBNL tool (Windows)
UN Insulated Hydronic Floor Detail

Insulated Hydronic Floor Detail

THERM analysis: insulation @ radiant topping slab

ACOUSTICAL METAL DECKING

ACOUSTIC TREATMENT AT CEILING

Reinforced Concrete Topping Slab
Radiant Heating Tube
Rigid Insulation
Vapor Barrier
Existing Concrete Deck

Interior
Exterior (S.F. Bay)

Reinforced Concrete Topping Slab
Radiant Heating Tube
Rigid Insulation
Vapor Barrier
Existing Concrete Deck

Interior
Exterior (S.F. Bay)

40°F
74°F

48°F
40°F

Topping Slab on Existing Concrete Deck

Interior
Exterior (S.F. Bay)
<table>
<thead>
<tr>
<th>Description</th>
<th>kWh</th>
<th>kBtu</th>
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<tbody>
<tr>
<td>Electricity Consumed</td>
<td>268,696</td>
<td>916,791</td>
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<tr>
<td>Natural Gas Consumed</td>
<td>15,870</td>
<td>1,568,032</td>
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<tr>
<td>PV Electricity Generated</td>
<td>345,997</td>
<td>1,180,541</td>
</tr>
</tbody>
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**SFAI NET EUI**  
14.5 kBtu/SF

**Baseline EUI (standard higher ed. bldg)**  
132.0 kBtu/SF  
83% IMPROVEMENT