Green Roof

- Environmental Education
- Water Retention System
- Usage of natural light
- Environmentally fitting building into its surroundings
- Incorporating new elements with old elements

Suggestions
- Increase number of photovoltaic cells or look into other energy generating systems
- Could have retained and reused more of the old buildings
- Should have looked at reducing building footprint by building upwards and not outward
- Lowered ceilings for better HVAC system effectiveness

Sustainable Sites
- Erosion & Sedimentation Control
- Brownfield Redevelopment
- Alternative Transportation: access to public transportation, Storage, Parking
- Reduced Site Disturbance: Restore Open Space, Reduce Building Footprint
- Stormwater Management: Treatment of Water
- Landscape & Roof Design to reduce Heat Island Effect
- Light Pollution Reduction

Water Efficiency
- Water Efficient Landscaping
- Innovative Wastewater Technology
- Reduction of Water Use

Energy & Atmosphere
- Building System Commissioning
- Optimize Energy Performance
- CFC Reduction in HVAC Equipment
- Renewable Energy
- Ozone Depletion Reduction
- Green Power

Materials & Resources
- Construction Waste Management
- Resource Reuse
- Recycled Content
- Local Regional Materials
- Certified Wood

Indoor Environmental Quality
- Smoke Control
- Carbon Dioxide Monitoring
- Ventilation Effectiveness
- Construction Management (air quality)
- Low Emitting Materials
- Indoor Chemical and pollutant Control
- Systems Control
- Thermal Comfort
- Daylight and Views

Innovation & Design Process
- Transportation Incentives
- Green Building Education
- Pest Management
- Flexible Exhibition System

Architect: Renzo Piano
Engineer: Arup
General Contractor: Webcor Builders
Location: San Francisco, CA
Date: 2000-2008
Cost: 500 Million
Size: 410,000 sq ft

Essential Savings and Materials

- 3.6 million Gallon of Rain Water Savings per year
- 90% Recycled Materials
- 50% Lumber from Sustainable Forests
- 68% Recycled Blue Jeans
- 90% Natural Light/ Ventilation
- 10% Electrical Savings
- 30% Energy Consumption Reduction
- 60,000 PV Cells

Energy Efficiency: Heating and Cooling Diagrams

Sandy Chung & Heather McGinn