

Green and Sustainability Design Elements

Elementary School Building Committee Forum

June 2, 2009

Phil Poinelli, Lorraine Finnegan SMMA
David Korn, Associate ESBC member; CADMUS



Overview

- Purpose of session
- Other sessions this summer
- Overview of timeline for project
- Next Steps

Project Timeline

- MSBA Board Meeting June 3 2009
- SMMA Design Team summer 2009
- MSBA Board Meeting Sept 2009
- Stow Special TM Oct 19 (ballot 10/29)
- Construction: Summer 2010

Green Design in MA

- The Collaborative for High Performance Schools (CHPS) published a point system adopted by Massachusetts
- Meeting the requirements can earn up to an additional 2% of eligible construction costs from the MSBA ~ \$400,000+

Funding Sources

- MSBA (40-50% (+2%) of eligible costs)
- Commonwealth Solar
- National Grid – Gas only
- Hudson Light & Power - Possible options?

Current Design Scenario



Green Can Mean Many Things

- Energy Efficiency
- Renewable Energies
- Regional Planning
- Re-used Materials
- Indoor Air Quality
- Indoor Noise Reduction
- Day-lighting And Views
- Stormwater Management

Consideration Points

- How do we view and pursue Green?
 - Cost effective
 - Educational benefits
 - Long term environmental impact
- Do we have a payback, ROI target?
 - Allocation of Green 2% funding
 - Escalation of energy above inflation: risk

Solar PV

- Cost: roughly \$8,000 - \$10,000/ kW
- Production 1,300 kWh/kW
 - Enough to power 160 sq. ft.
 - Saves \$170/year
- Payback
 - Without incentives ~45 years
 - With incentives ~ varies

Discussion Topics (breakouts)

- Site
 - Regional/Town Related Issues (Bike Paths, Vegetable Gardens, etc.)
 - Stormwater Management
- Water Efficiency
- Energy Efficiency
 - Renewable Energy
- Construction Materials
- Indoor Environmental Quality
 - Day lighting
 - Acoustical Performance
- Policy & Operations
 - Anti Idling Policies
 - Energy Star Appliances

Site & Water Discussion Group

- Site
 - Regional/Town Related Issues (Bike Paths, Vegetable Gardens, etc.)
 - Stormwater Management (Ground water recharge, green roofs)
 - Reduced Heat Island Effect (Shade Trees, light colored roof)
 - Minimize Parking
 - Exterior Light Pollution
- Water Efficiency
 - Indoor water use reduction/conservation
 - No Permanent Irrigation
 - Rainwater Harvesting

Energy Discussion Group

- High Efficiency Hot Water Boilers
- Energy Management System
- Energy Recovery Units
- High Performance Envelope
- Renewable Energies
 - Solar – PV & Thermal
 - Wind
- Lighting
 - Efficient Technologies
 - Lighting Controls
 - Daylight Harvesting

Material & IEQ Discussion Group

- Materials
 - Construction Waste management & recycling
 - Highly recyclable material selections
 - Building Reuse - Renovation
- Indoor Environmental Quality
 - Floor Mats
 - Mechanical Equipment Filters
 - Acoustics in classrooms
 - Thermal Comfort

Reconvene From Breakouts

- Groups Report
 - Site & Water
 - Energy
 - Materials and IEQ

Next Steps

- Design Process
 - Input & Feedback
- Schedule