

Creatively Financed New Construction at Portland Public Schools

*Rosa Parks School and
da Vinci High Performance Classroom*

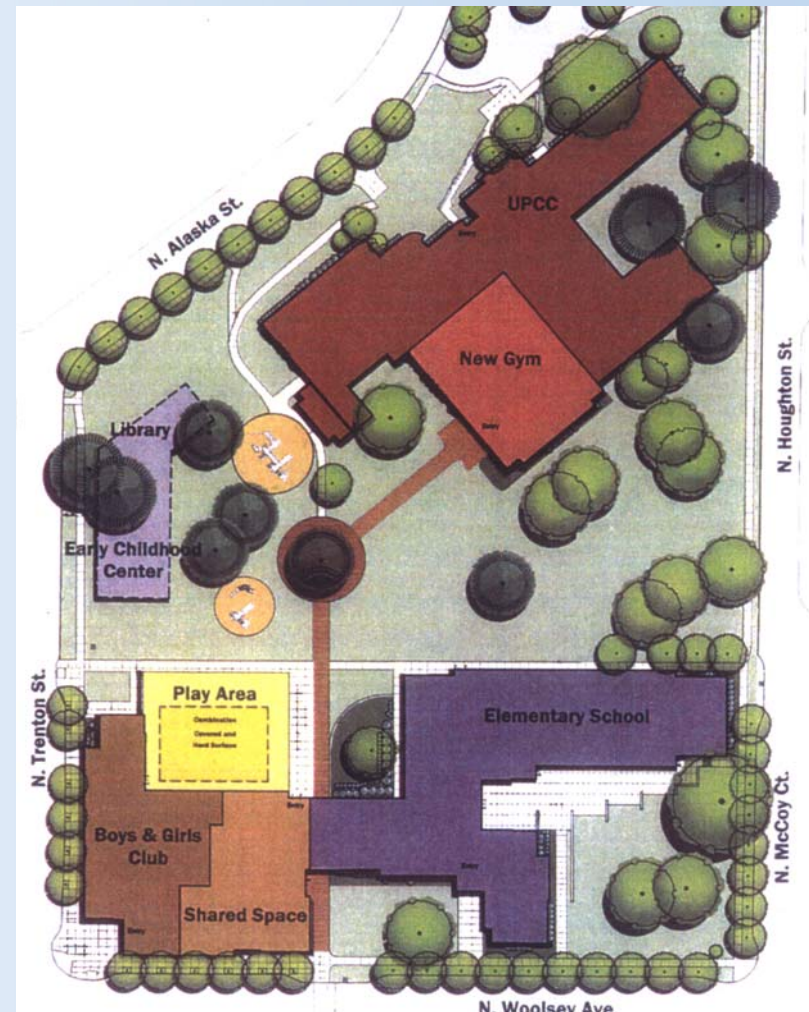
PCAPPA
October 9, 2008

Catherine Diviney, PPS Energy Specialist



Rosa Parks School

- Located in North Portland
- Built in 2006
- Architect: Dull Olson Weekes
- Contractor: Walsh Construction
- 66,683 SF
 - K-5 School
 - Shared Space
 - Boys & Girls Club



Awards

- **Richard Riley Award**, The American Architectural Foundation and KnowledgeWorks Foundation
- **Mayor's Award for Design Excellence**, Portland Chapter of The American Institute of Architects
- **2008 Grand Prize for Design**, National School Boards Association
- **2008 William W. Caudill Citation**, *American School & University Architectural Portfolio*
- **Pinnacle Award for Architectural Excellence**, NW Regional Council of Educational Facility Planners
- **Design Award**, National American Institute of Architects/Committee on Architecture for Education



Awards

- 2007 Grand Prize for Sustainability, Learning by Design
- 2007 Grand Prize for Design, Learning by Design
- LEED Gold, U.S. Green Building Council



Energy, etc.

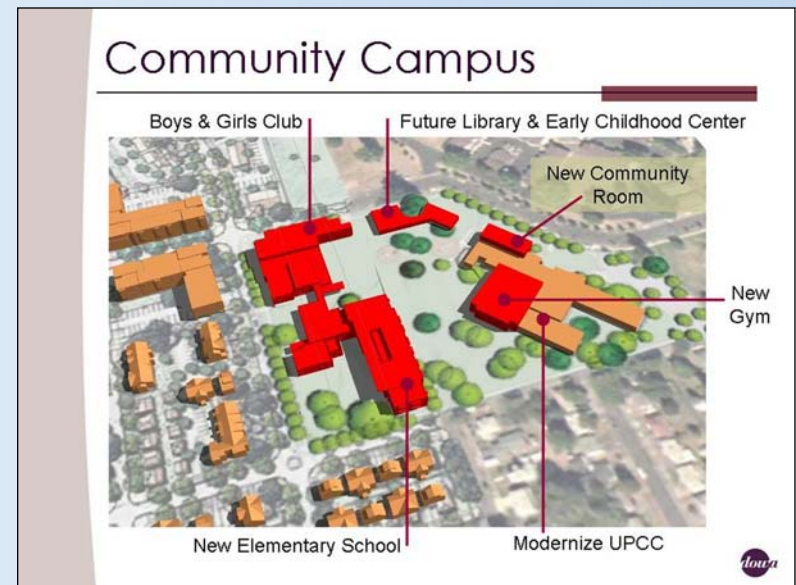


- Uses 20-50% less energy than other PPS schools, *even with air conditioning*
- Energy Star rating (unofficial): 77
- Energy Use Index: 42
- Other Features: solar, stormwater management, heritage trees, sunscreens, daylighting & daylight controls, displacement ventilation



How it all began

- Housing Authority of Portland (HAP) came to PPS
 - Redevelopment project – Columbia Villa, 850 housing units
 - What are the elements of a community?
 - **PPS no \$**, one new school built in last 30 years
 - Replace Ball Elementary, design for 21st century
- Community Campus at New Columbia - HAP, PPS, Portland Parks & Rec, Boys & Girls Club
- Child-centered vision: whole community, whole child



Financing

- \$17.5 Million
 - \$8.8 M PPS Loan
 - \$3.8 M New Market Tax Credits (U.S. Treasury, enterprise zone, low-income)
 - \$1.1 M Housing Authority of Portland (donated site)
 - \$1.1 M City of Portland (in return for Ball Elementary site)
 - \$2.1 M Boys & Girls Club Fundraising
 - \$200K Homebuilders (donations)
 - \$250K Bank of America (lender)
 - \$150K Interest on Loan Principal



Other Funding



- Portland Parks & Rec built new gym
- BEF provided demonstration solar
- \$750K for FFE (& IT) from biennial State of Oregon allocation
- \$202K Energy Efficiency Incentives (typically reimbursements)
 - \$50K ODOE High Performance Schools Program
 - \$47K Energy Trust of Oregon, New Buildings
 - \$105K Sustainable Bldg Tax Credit (BETC) – Kroger/Fred Meyer, Pass Through-Partner



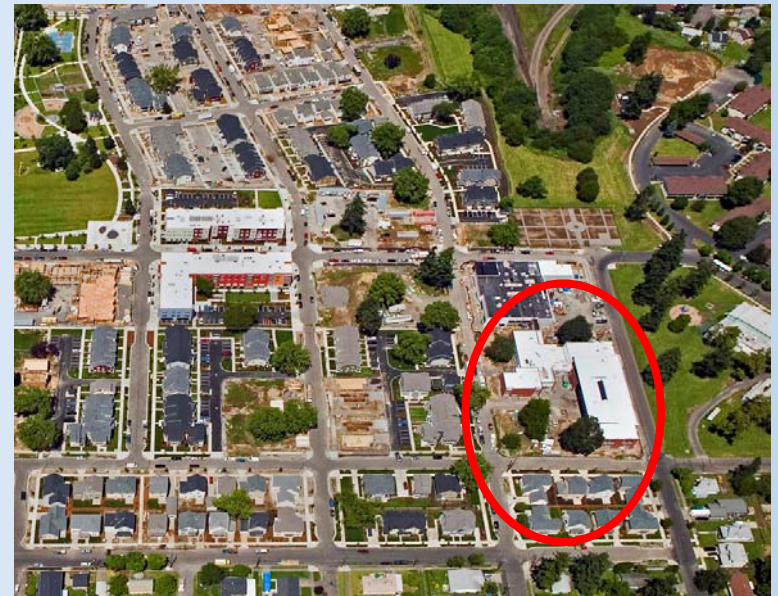
BEF – Solar

- 1.1 KW demo solar system = 6 panels
- Bonneville Environmental Foundation – Solar 4R Schools
 - About 70 projects across U.S.(PPS has 5)
 - Display kiosk with information about renewable energy and real-time generation data
 - School Solar Champion (teacher)
 - Education program – training, curriculum, toys, support
- Cost: \$0
- www.b-e-f.org



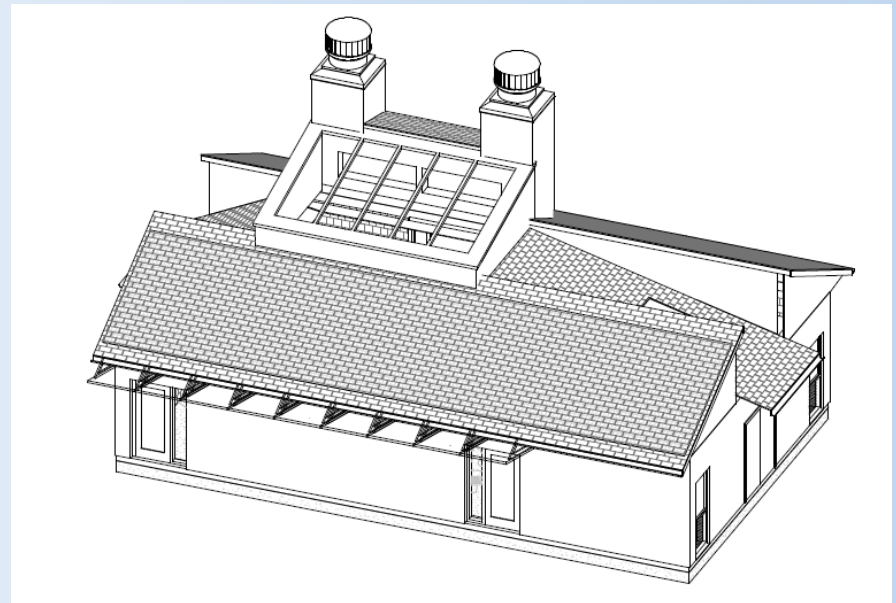
Operational Partnerships & Efficiencies

- Shared Space – BGC and Gym
 - Reduced footprint, less equipment
 - Reduce “vacant” hours
 - Reduced cost (e.g., utilities, custodial, maintenance)
- Synergy of missions/programs
 - Child-centric, continuity
 - School vs. after-school/summer
 - School closes/BGC opens
- Community – sum greater than its parts
 - Campus (co-location, vacation)
 - Linkages (e.g., resource room)



da Vinci High Performance Classroom

- Located in Northeast Portland
- Construction begins Oct 2008
- Occupancy in Aug 2009
- Architect: SRG Partnership*
- 1,490 SF demonstration band/music classroom
 - Main classroom
 - Office alcove
 - Two recording/practice rooms

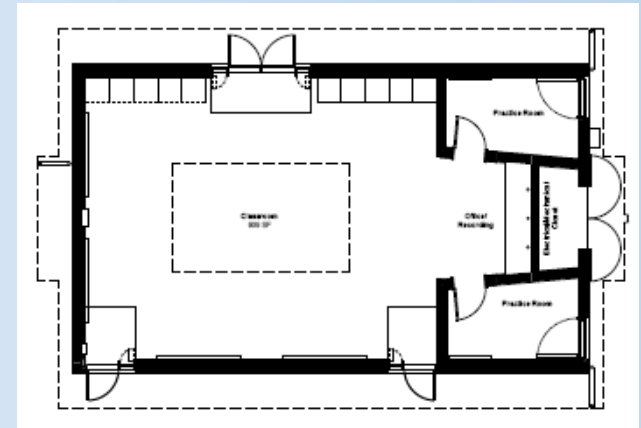


**Design Team: SRG Partnership, Solarc Engineering, KPFF, Greenworks, Listen Acoustics, Energy Studies in Buildings Lab (U of O), Green Building Services*



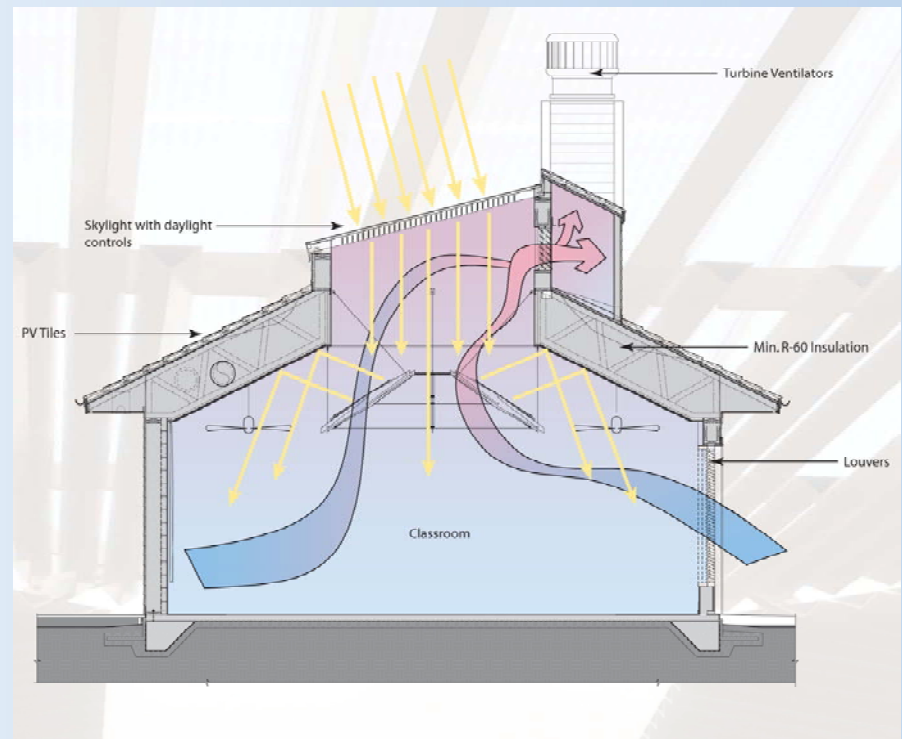
Goals

- LEED Platinum
 - Net-Zero Energy
- } 1st public school to achieve?
- Provide small-scale demonstration of green building technologies and opportunity for hands-on experience (with a view to future district construction)
 - Capitalize on opportunities for “owner/occupant education” and “building as a teaching tool” throughout entire process – pre, during and post-construction
 - Get noisy band classroom out of overcrowded school



Design Features

- Daylighting: central skylight with louvers, windows, doors
- Natural ventilation: operable windows, high ceilings, ceiling fans, stack turbine ventilators
- High thermal mass (very thick walls) and night venting
- Solar: integrated PV roof shingles sized to offset minimal electric use
- Artistic stormwater management draining into adjacent water garden
- Non-toxic, environmentally-friendly building materials and construction processes



How it all began

- da Vinci science teacher read about Better Bricks high performance classroom project at Mount Angel Abbey
- da Vinci overcrowded; band in 1924 portable attached to main building
- **No funding**
- Six months later, Northwest Environmental Defense Center @ Lewis & Clark looking for local recipients of a Clean Air Act settlement against Owens Corning
 - da Vinci selected
 - \$125,000



3 years in the making...

- Many hours...
 - Many meetings....
 - Many partnerships....
 - Some unsuccessful partnerships...
 - One baby....later...
-
- Ready to start construction!

January	February	March
April	May	June
July	August	September
		December



Financing



- \$775,000
 - \$250,000 PPS (equivalent of new portable)
 - \$125,000 Owens Corning
 - \$ 50,000 City of Portland, Green Investment Fund
 - \$ 15,000 Oregon Department of Energy (in exchange for plans)
 - \$180,000 Business Energy Tax Credit – partner: Gerding Edlen, local developer
 - \$ 10,000 Mark Edlen, personal gift
 - \$ 28,000 da Vinci School Fund Raising (partners)
 - \$ 12,000 Bonneville Environmental Foundation
 - \$ 25,000 Additional energy efficiency incentives
 - \$ 80,000 Additional PPS funding (grant pending)



Pro Bono



- Design team – MANY pro-bono hours
- Walsh Construction – Cost estimating
- Green Building Services and BEA Consulting – LEED and commissioning
- PBS Environmental & Engineering – Geotech and construction project management
- Waste Management – Drop boxes
- Carlson Testing – Construction inspections
- Bonneville Environmental Foundation – PV and interactive web-based monitoring system
- Todd Hess Building Company – GC labor hours, educational tours/training
- TBA – Signage installation



How we built our partnerships - Messages

- Cool, innovative project; people want to be part of it
 - 1st of a kind: LEED platinum *AND* Net-Zero
 - Enduring impact: Demonstration project, future PPS schools
 - Educational impact: For the kids, for the future



How we built our partnerships – Tactics

- Mutual benefit
 - OR Dept of Energy gets plans; PPS gets \$
 - Todd Hess gets LEED experience; PPS gets good price and invested GC
 - Gerding Edlen gets tax credit and PR, PPS gets \$
- Small, discrete items or services, (especially existing vendors)
 - Waste Management → Drop boxes
 - Carlson Testing → 1 or 2 inspections
- Share cost
 - PBS – PPS pays for geotech, gets project management free
 - GBS – PPS pays for energy model, gets LEED and commissioning free



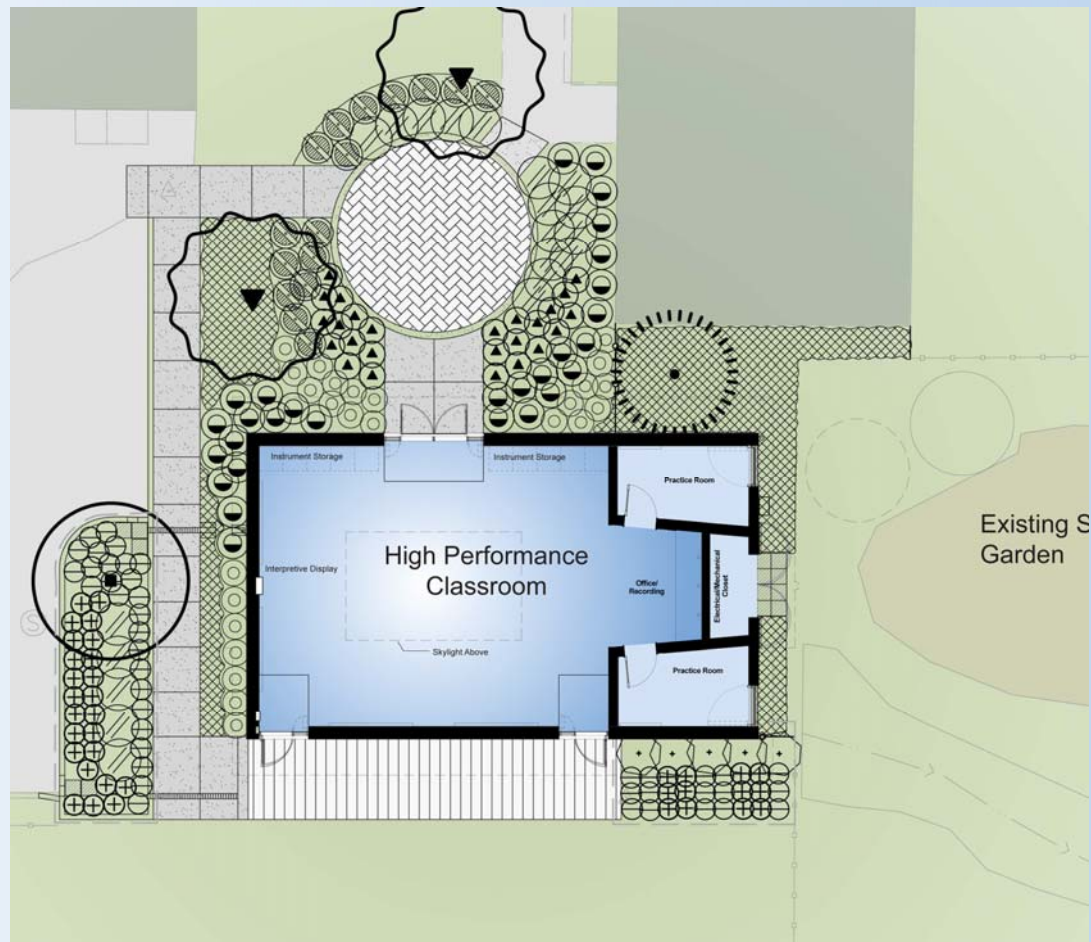
What do partners get in return?

- Create a partner/donor information packet
- Describes project
- Describes recognition
 - Donor plaque/PR recognition
 - Copy of LEED certificate
 - Invitation to and recognition at opening ceremony



Educational Partnerships & Opportunities

- Greenworks working with students
 - Provide artwork for pavers in courtyard
 - Learn about stormwater management
- Located next to existing rain garden
- 100% stormwater managed on-site



...More Educational Opportunities

- Todd Hess and PPS scheduling weekly tours of construction site
 - Anyone can come and learn about project
 - Special field trips for PPS and other student groups
- PPS hired Green Building Education Intern
 - Developing signage and other multi-media materials
- Bonneville Environmental Foundation/Fat Spaniel providing touch screen kiosk to display energy use and building performance data
 - Real-time data
 - Students responsible for tracking LEED Measurement & Verification plan developed by Solarc



Additional Information

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