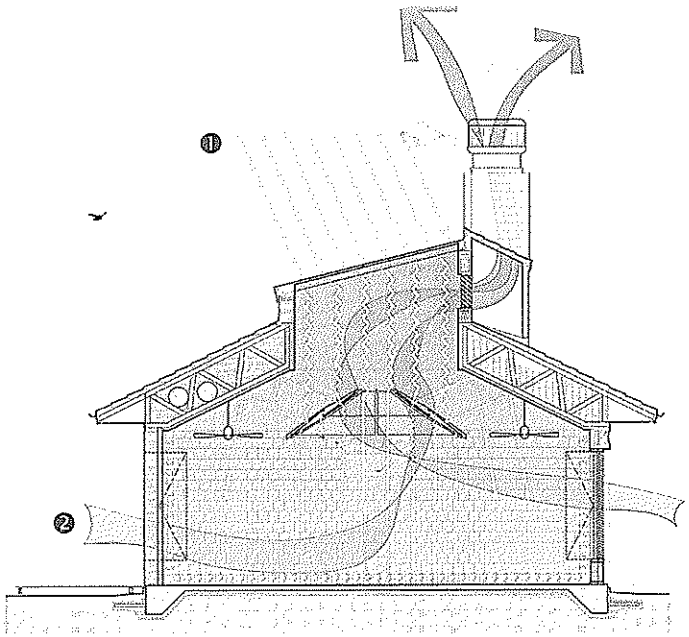
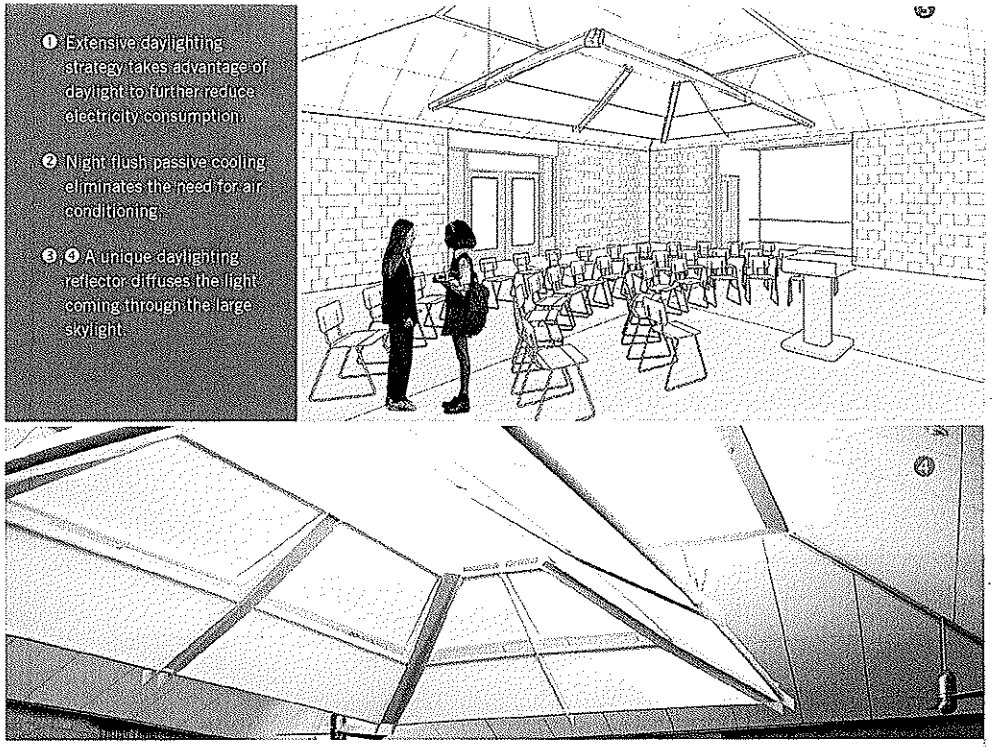




SUSTAINABLE DESIGN STRATEGIES

Combining learning with sustainability, the new Evans-Harvard High Performance Music Classroom at da Vinci Arts Middle School demonstrates possibilities for energy efficiency and green building practices in a Portland Public Schools facility. Winner of the Green Investment Fund grant from the City of Portland, the building houses the music classroom and practice space for the school's band and music programs while demonstrating the District's ethic of conservation through energy and resource efficiency. It is designed to satisfy the highest nationally recognized green building criteria (LEED Platinum) and will excel in energy performance by using several smart passive systems.

PASSIVE COOLING

Passive cooling utilizes added thermal mass for heat storage during the day. During the cooling season, exterior doors covering air louvers will be opened at night, letting cool air pass over the slab to wick away heat. In the skylight well, an automatic damper lets air pass through ventilation chimneys to the exterior. Turbine ventilators are fixed to the outlets to provide weather protection and aid thermal stack effect airflow, drawing the hot air out of the building. There is no mechanical cooling in the building; ventilation air is provided by a highly energy-efficient heat recovery ventilator that swaps the heat between the air intake and exhaust.

DAYLIGHTING

Daylighting beautifully illuminates the spaces. Light enters the classroom through a large central skylight that contains intelligently controlled light-modulating louvers. This filtered light is then reflected up onto the sloping ceilings by a suspended fabric reflector, diffusing the light further. The sloped ceiling plane receives this bounced light and reflects the light back down into the room. The end result is an even distribution of light at the level of the occupants. Because electricity for lighting is one of the main energy uses for classroom spaces, this is an important feature in reducing energy consumption.

INSULATION

The building is super-insulated and sealed against air leaks, reducing heat loss in the winter and heat gain from hot summer outdoor temperatures.

PHOTOVOLTAIC (PV) ARRAY

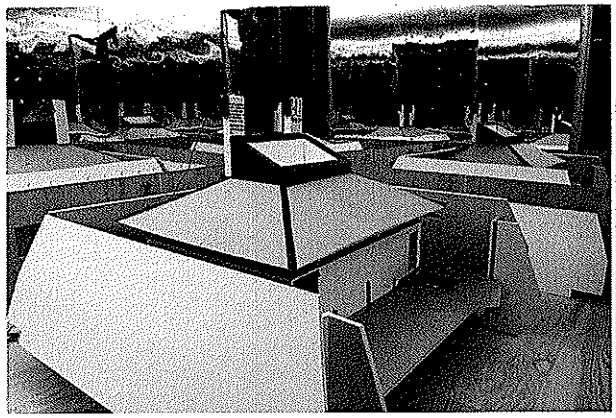
After all possible energy usage is minimized using the aforementioned strategies, a unique photovoltaic array on the south-facing roof provides the electrical power used in the space. This array is comprised of 153 tiles that integrate into the roofing tile system, providing a power-generating integrated roofing assembly. The system has been sized to provide as much of the building's electricity usage as possible, with the goal of achieving net-zero energy use over the course of the year.

STORMWATER

The building is situated over what was previously an asphalt parking lot. Drought-tolerant native plantings around the new building provide habitat for insects and birds. All rainwater that lands on the site and the new building's roof is guided toward the retention and infiltration features in the adjacent rain garden. This rain garden was built several years ago by da Vinci students and science faculty and remains an excellent example of how to treat stormwater.

PROTOTYPE AS A MODEL

This high-performance classroom building, a collaborative project with Portland Public Schools (PPS), received extensive support from the sustainable design community and will serve as an example for future green decision-making in PPS facilities, existing and new. From the students who learn in the space to the community that surrounds it, this building is sure to set a high bar for green building practices on multiple levels.



PORTLAND PUBLIC SCHOOLS

DESIGN TEAM

Architecture	SRG Partnership, Inc.
Client	Portland Public Schools
Energy Studies	Energy Studies in Buildings Laboratory
Mechanical/Electrical Engineer	SOLARC Engineering
Structural & Civil Engineer	KPFF Consulting Engineers
Landscape Design	Greenworks
LEED/Commissioning/Energy Modeling	Green Building Services
Acoustics	Listen Acoustics
Project Management for PPS	PBS Engineering + Environmental
General Contractor	Todd Hess Building Company

SRG PARTNERSHIP INC
ARCHITECTURE PLANNING INTERIORS

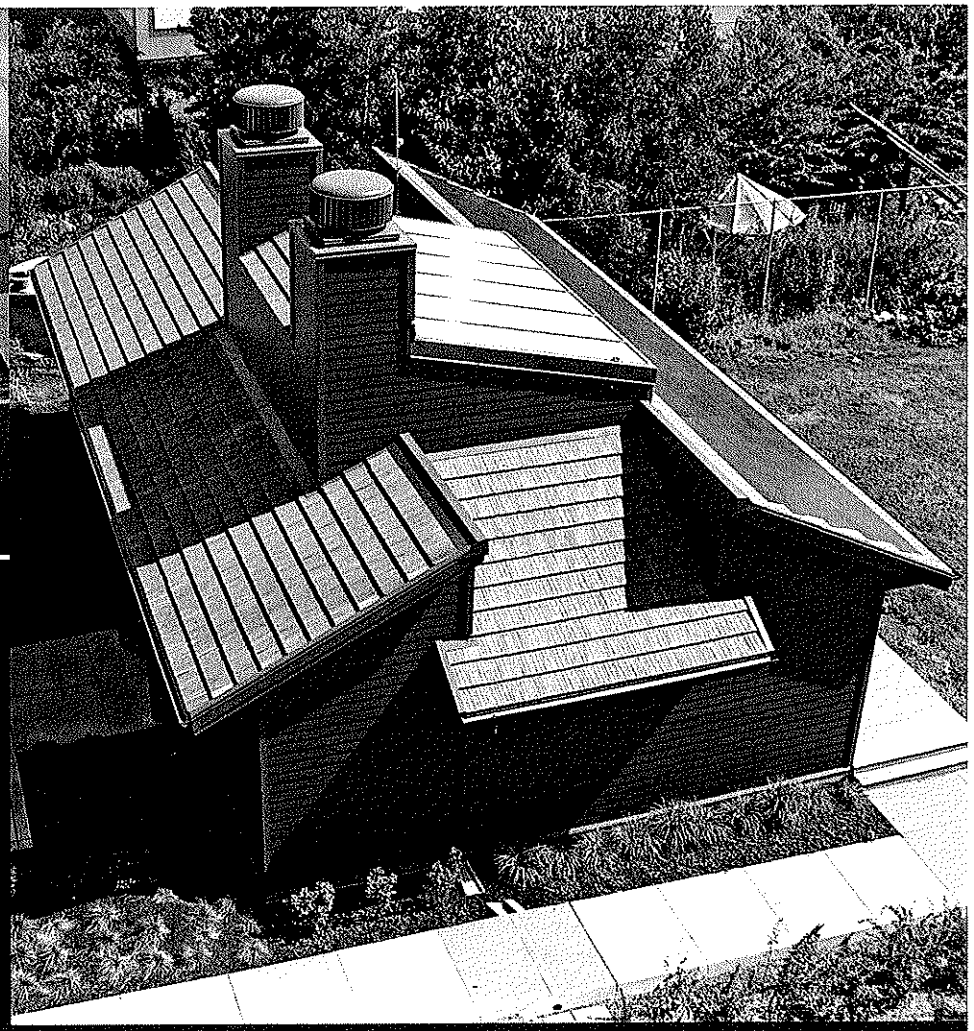
FUNDING PARTNERS

SRG Partnership
Todd Hess Building Company
PBS Engineering and Environmental
City of Portland - Green Investment Fund
Bonneville Environmental Foundation
Energy Trust of Oregon
Waste Management of Oregon
Oregon Department of Energy
daVinci Arts Middle School

American Time and Signal
BEA Consulting/GBS
Carlson Testing
Centerpoint Signs
Cisco
Clima-Tech Corp
Christensen Electric
Energy Studies in Buildings Laboratory
Green Building Services
Greenworks
KPFF

Lighting Control & Design
Listen Acoustics
Mark Edlen
Mutual Materials
NEEA/Better Bricks
Owens Corning
Portland General Electric
Solarc Engineering
Specialty Coatings
Walsh Construction

www.srgpartnership.com



EVANS-HARVARD HIGH PERFORMANCE CLASSROOM

DA VINCI ARTS MIDDLE SCHOOL
PORTLAND PUBLIC SCHOOLS