

# High Performance Features of the Calkins Road Middle School



a presentation to the  
**Pittsford Rotary**  
May 9, 2007

Pittsford  
Schools

the  
**Thomas**  
A TETRA TECH COMPANY group

# Design Approach

High Performance Features



## High Performance Achieves...

- Reduced Environmental Impacts
- Lower Maintenance and Operational Costs
- Inspirational Physical Environment
- Supports Student Achievement

# High Performance

High Performance Features



ROOF INSULATION **EXCEEDS** CODE REQUIREMENTS

LOW-ALBEDO ROOFING **MATERIAL** REFLECTS HEAT

FSC **CERTIFIED** WOOD FROM MANAGED FORESTS

HVAC EQUIPMENT LOCATED IN CORRIDORS TO **IMPROVE** CLASSROOM ACOUSTICS

INDIVIDUAL HEAT PUMPS PROVIDE **INDEPENDENT** THERMAL CONTROL OF CLASSROOM ENVIRONMENT

FLEXIBLE LIGHTING SWITCHING **ADAPTS** TO VARIOUS LIGHTING NEEDS

DIRECT / INDIRECT **LIGHTING** FIXTURES PROVIDE EVEN LIGHTING LEVELS

PERFORATED ROOF DECK IMPROVES CLASSROOM **ACOUSTICS**

OCCUPANCY **SENSORS** AUTOMATICALLY TURN OFF LIGHTS IN UNOCCUPIED ROOMS

BUILDING SYSTEMS EXPOSED FOR **EDUCATION** AND EASY MAINTENANCE

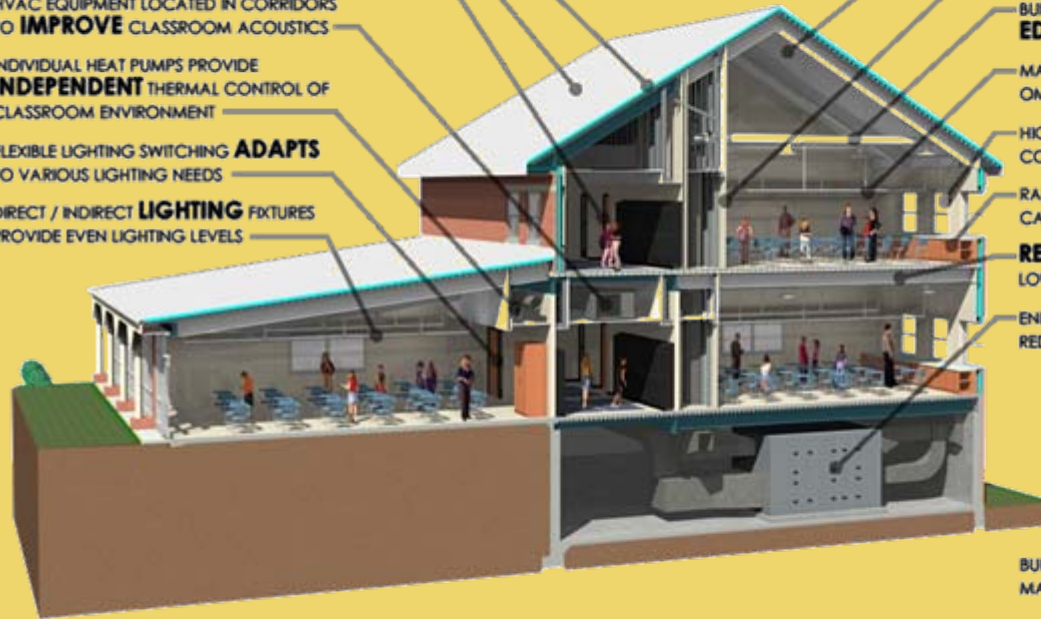
MATERIAL USAGE **REDUCED** BY OMITTING HUNG CEILING

HIGH **PERFORMANCE** LOW-E GLAZING CONTROLS EXCESS HEAT GAIN

RAPIDLY **RENEWABLE** MATERIAL USED IN CASEWORK

**RECYCLED** CONTENT MATERIALS LOWERS EMBODIED ENERGY

ENERGY **RECOVERY** VENTILATOR REDUCES ENERGY COST



BUILDING AXIS **ORIENTED** EAST - WEST TO MAXIMIZE SOLAR ACCESS

INTEGRATED BUILDING **MANAGEMENT** SYSTEM PROVIDES DISTRICT CONTROL AND MANAGEMENT OF ENERGY USE

ENERGY EFFICIENT **GEOTHERMAL** HVAC SYSTEM REDUCES ENERGY COST

# Reduced Environmental Impacts

High Performance Features



- Incorporate Recycled and Renewable Resource Materials in Construction
  - Forest Stewardship Council (FSC) Wood Veneer and Framing
    - Wheat Board Casework
    - Use of Recycled Content in Newly Manufactured Materials
- Development of Design that Minimizes Impacts to Existing Natural Resources
  - Streams & Wetlands
  - Historic Viewshed

# Reduced Environmental Impacts

High Performance Features



Historic Viewshed



Rural Context



# Lower Maintenance and Operational Costs

- Utilize System Components that Reduce Energy Consumption
  - “Geothermal” Ground Source Heating & Cooling
    - Heat Pumps on Water Loop
    - Energy Recovery



# Lower Maintenance and Operational Costs

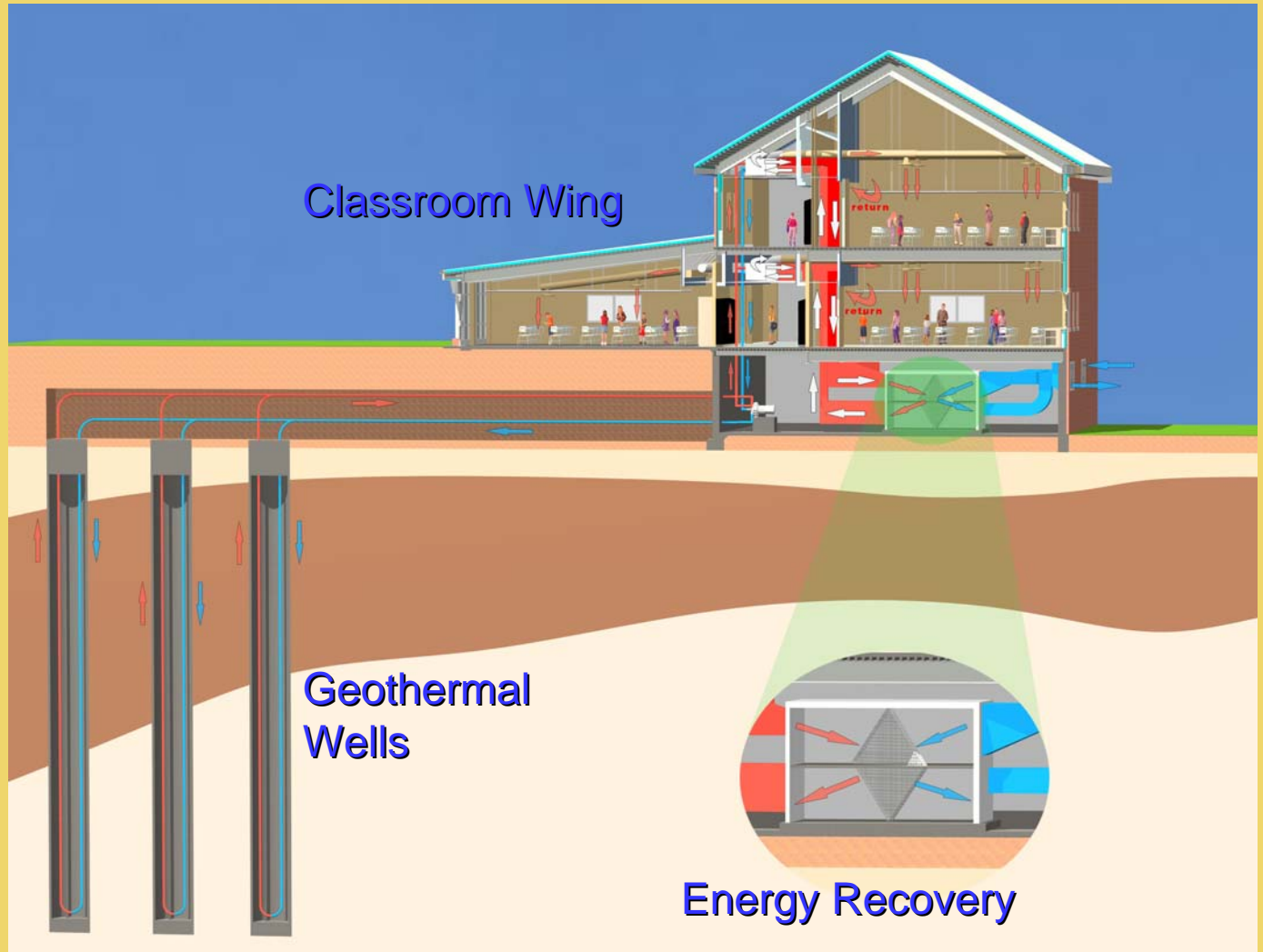
High Performance Features



Geothermal Well Field

# Lower Maintenance and Operational Costs

High Performance Features





# Inspirational Physical Environment

- Exposed Building Structure as Passive Educational Tool
  - Exposed Structural Steel and Infrastructure Components Throughout Educational Spaces
  - Promote Problem Solving and Creative Thinking



# Inspirational Physical Environment

High Performance Features



Classrooms



Library



Commons/Cafeteria

# Supports Student Achievement

High Performance Features



- Comfortable Physical Environment
  - Provision of Daylight and Fresh Air Increase Student Comfort and Alertness
  - Use of Medium Hue Accent Walls and Neutral Field Colors Decrease Eye Fatigue and Increase Concentration
  - Design of Spaces that Feel Open and Utilize Materials to Create a Welcoming Atmosphere

# Supports Student Achievement

High Performance Features



Classroom



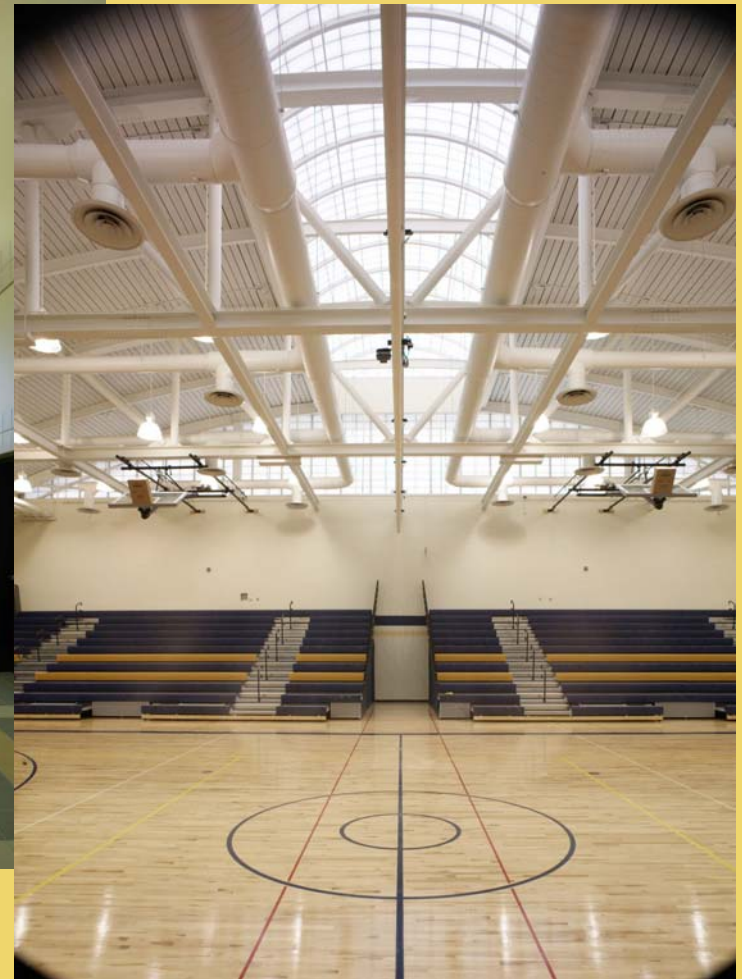
Technology Room

# Supports Student Achievement

High Performance Features



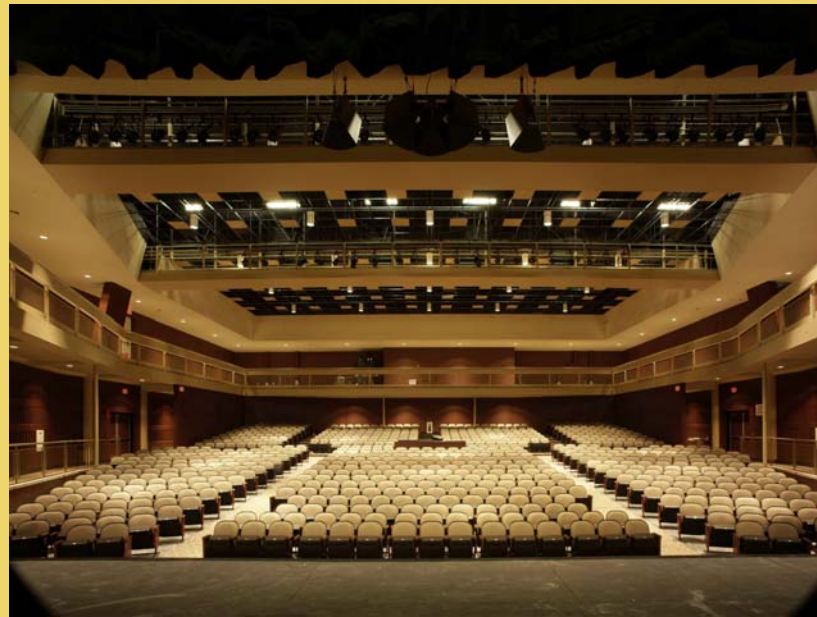
Main Entrance



Gymnasium

# Supports Student Achievement

High Performance Features



Auditorium



Main Entrance

# Summary

designed to integrate into its residential, agricultural and "Green Print/Viewshed" context

nestled into the Pittsford landscape, respecting scenic vantage points, historic farmsteads, and new homes  
a welcoming school, sensitively scaled, sited, detailed and reflecting the best educational thinking of this nationally recognized district



# Awards



The Calkins Road Middle School is the Recent Recipient of Two Design Awards

**OUTSTANDING DESIGN**

from

American School & University

**HONORABLE MENTION**

from

American Institute of Architects Southern  
New York Chapter

High Performance Features

