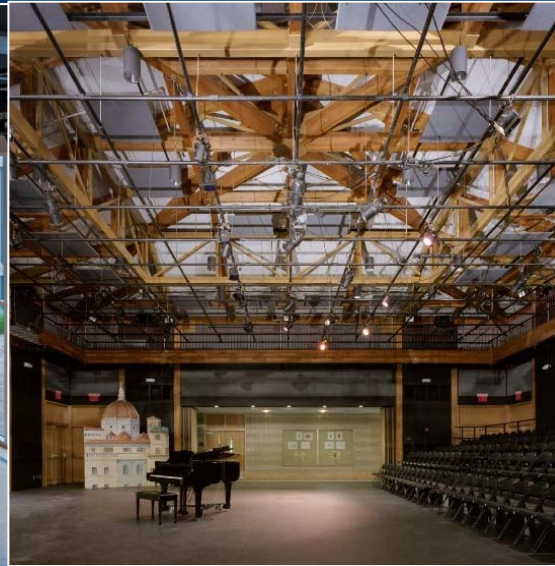




Elmsford Union Free School District

Capital Improvement Planning Committee – January 7, 2015



Presenters

Russell A. Davidson, FAIA

President, KG&D Architects & Engineers, PC
Project Executive / Principal in Charge

Erik J. Wilson, AIA

KG&D Architects & Engineers, PC
Associate Principal



Design Philosophy

Listen,

We listen actively to the owner's vision and needs, closely evaluate existing spaces and programs, and look at the unique context of every project.

Imagine,

We then help to reveal the full potential of a new or renovated building through a creative and imaginative process of testing good ideas with design.

Build.

We implement a quality designed building project that satisfies the owner's needs and surpasses expectations.



21st Century Schools

educational trends

- schools within a school
- project-based learning
- community integration
- multi-purpose spaces
- small group instruction

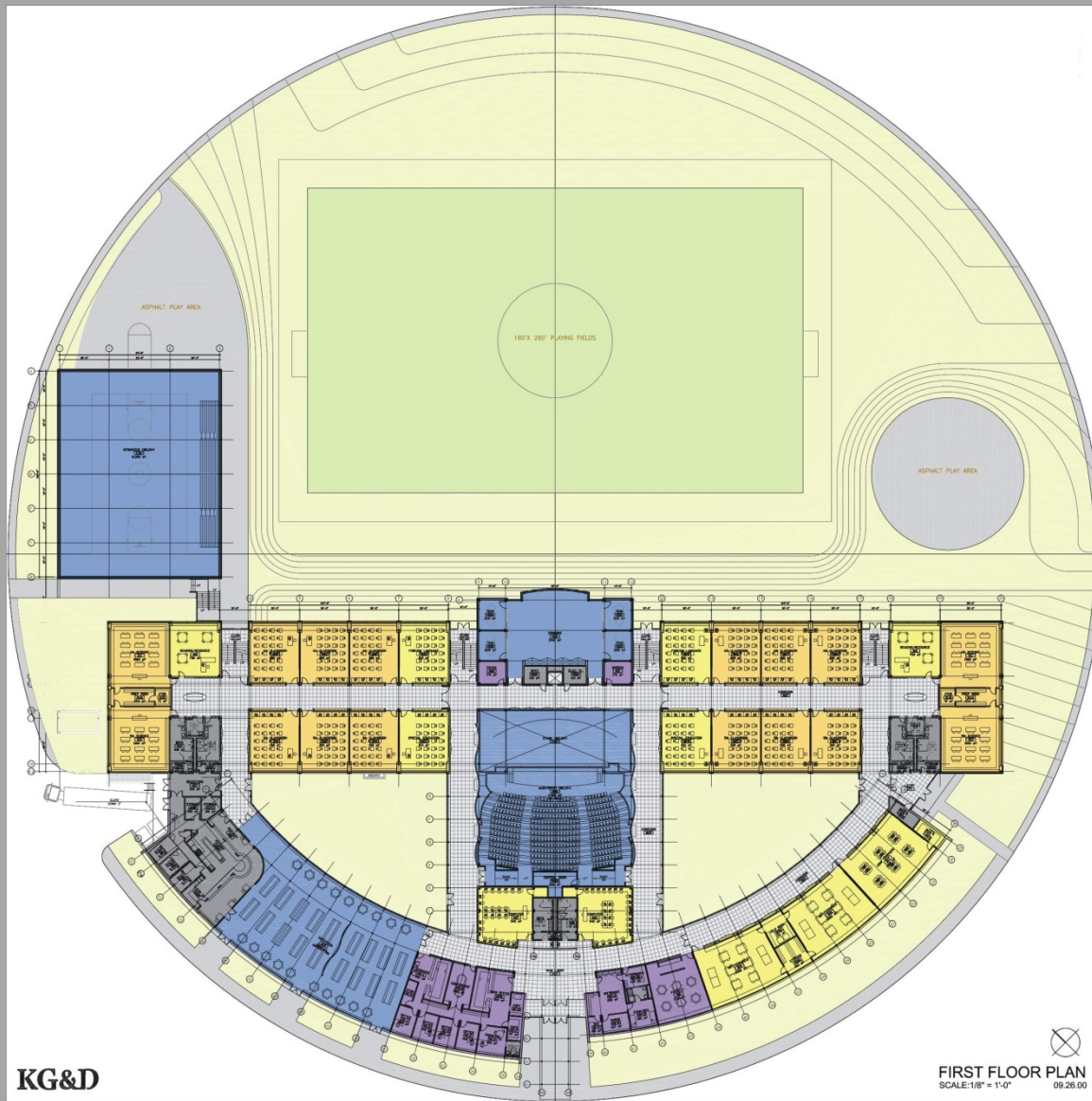
sustainable design

- reduce energy use
- daylighting & ventilation
- materials (renewable & non-toxic)
- educational opportunity

Russell A. Davidson, FAIA, President

schools
within a school

House Model



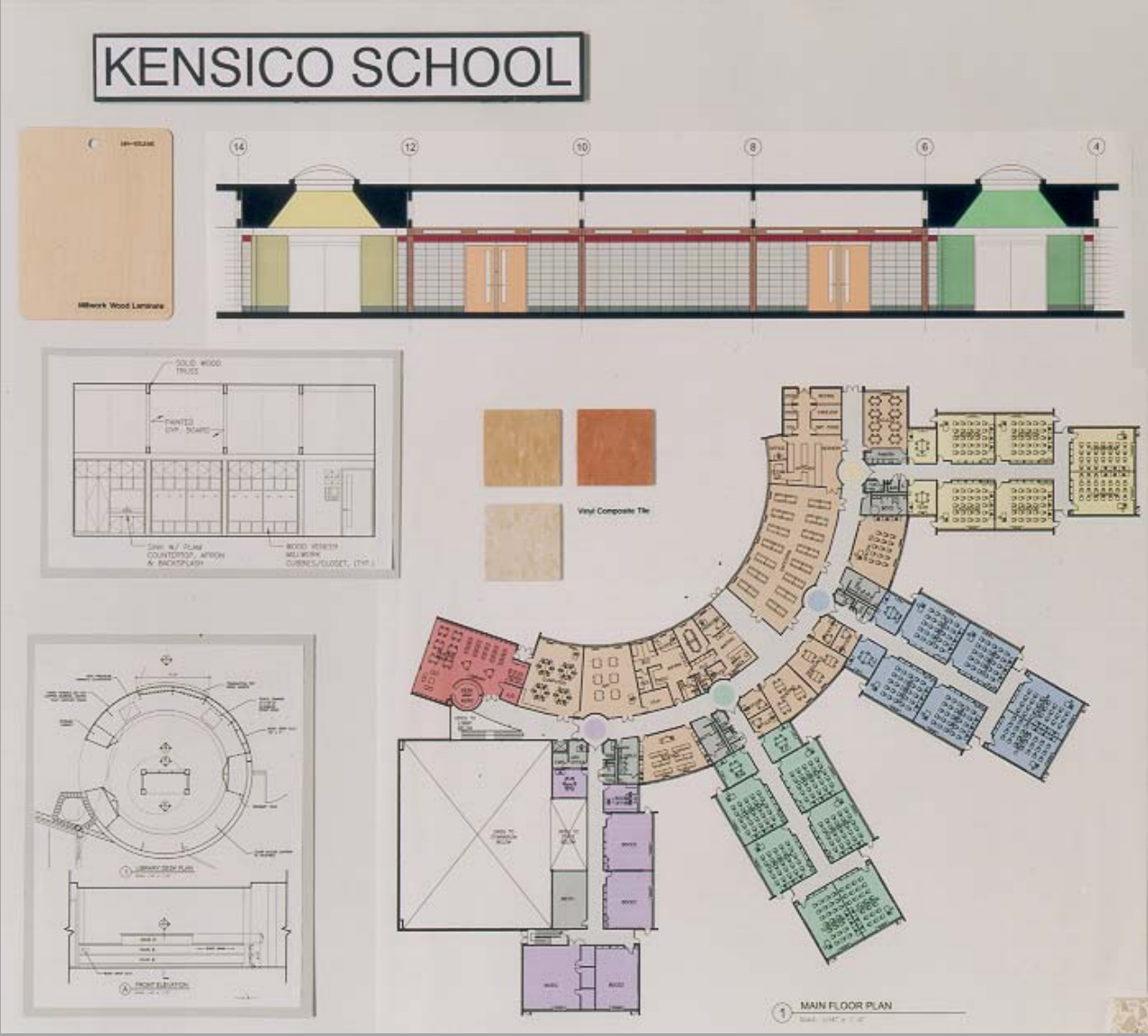
KG&D

FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0" 09.26.00

Grade Clusters or Teams/Cohorts



Distinct Entries & Identity



Streetscapes



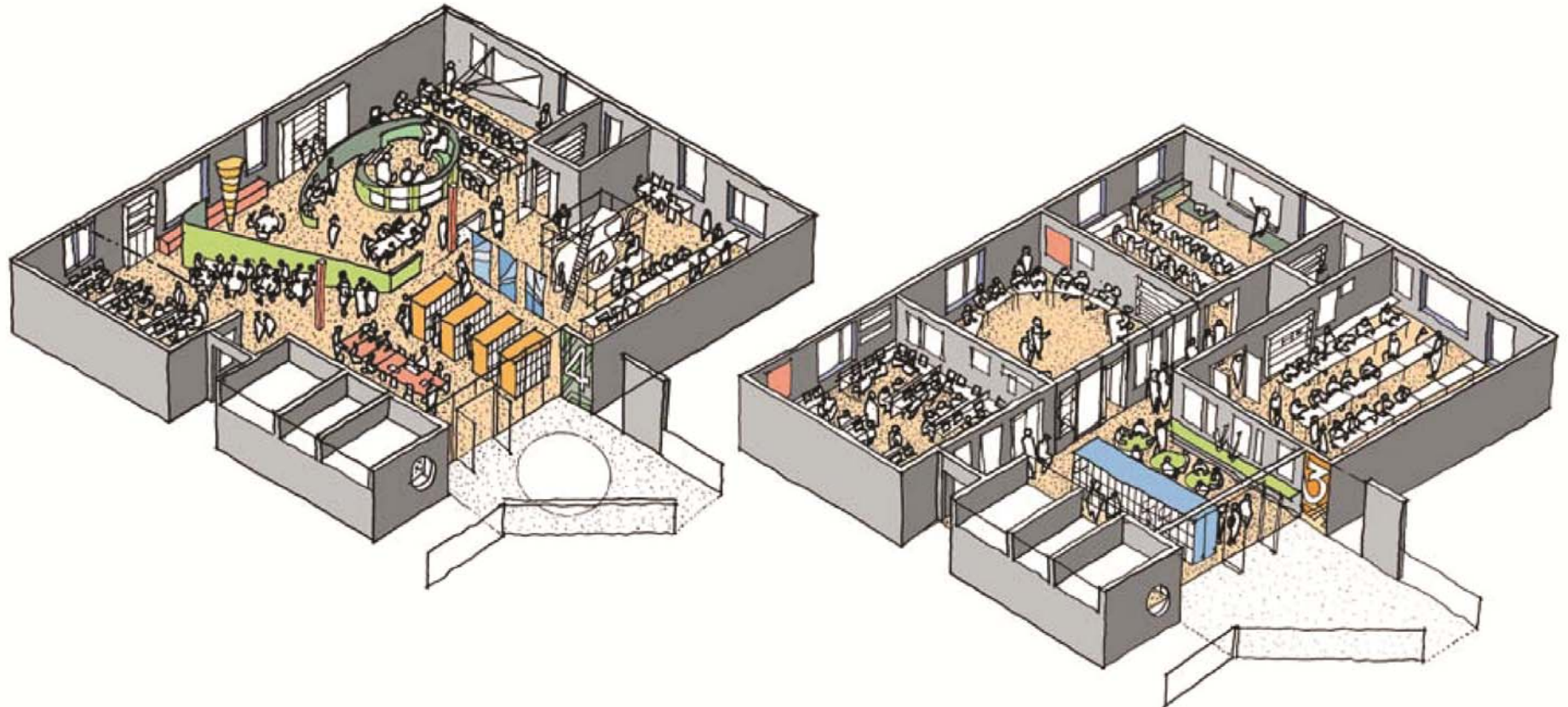
project-based
learning

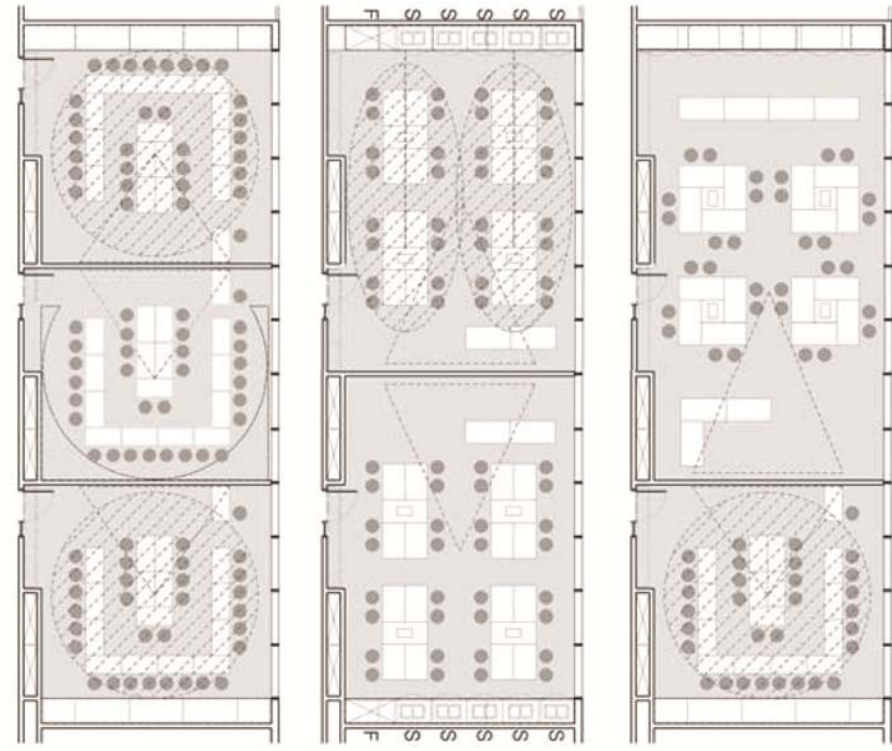


moveable walls

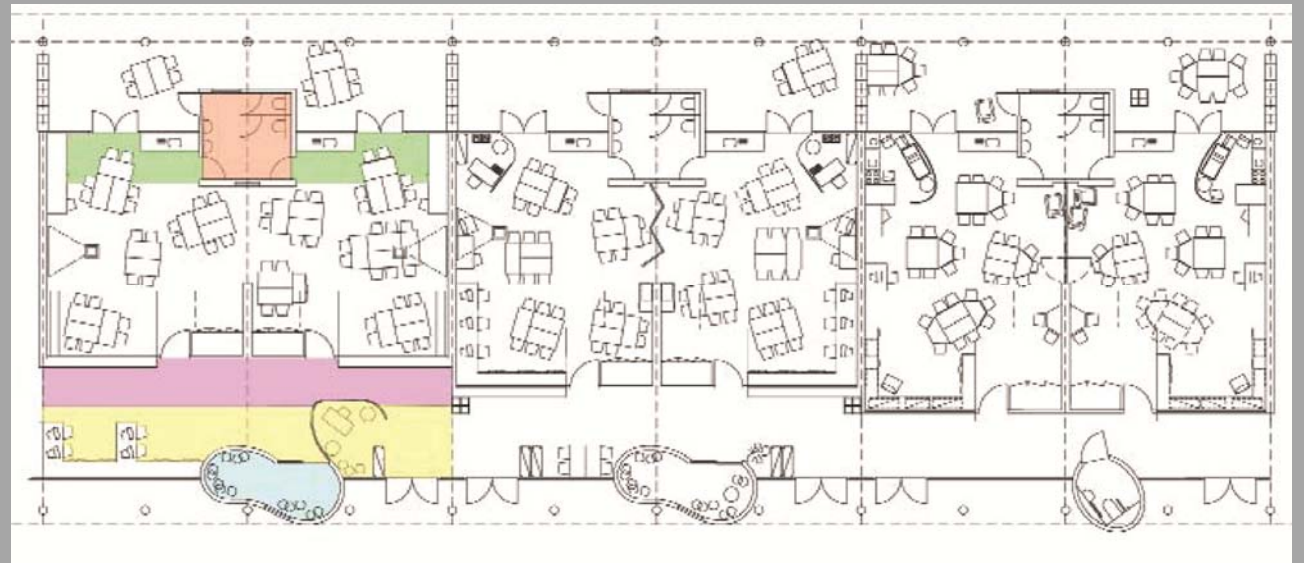


Learning Communities





reconfigurations
flexible spaces
require larger rooms





“Swiss Cheese” Classrooms





Commons/Project Areas



Roslyn High School: Cafeteria Commons



Ridgefield Academy "The Bridge" Learning Commons



White Plains High School: Library Commons



Dobbs Ferry: Cafeteria/Learning Commons



Jacob Burns Media Arts Lab: Media Center



White Plains High School: Cafeteria



Universal Labs: Interdisciplinary



Community Integration





Universal Access & Wayfinding



multi**purpose**
spaces



informal teaching
and meeting spaces



Indoor/Outdoor Connection



Outdoor Classrooms



Small Group Instruction



Other ideas

technology:
wireless vs.
dedicated stations

middle school
identity

future schools as
network hubs/
broadcast centers?

long-term
flexibility: the
building should
serve any grade
or cluster
configuration

learning styles
project-based
teaming

“moveable feast”:
rolling labs and
computer stations

sustainable
design

why green schools?

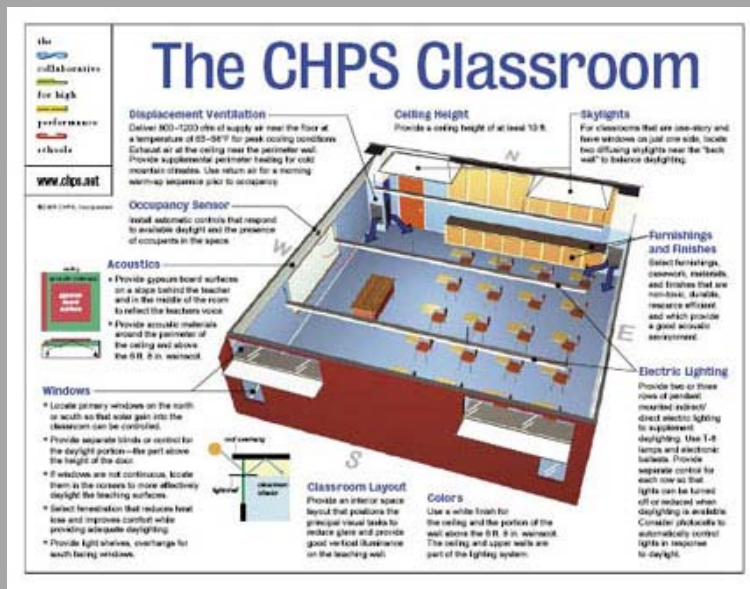
- daylight and fresh air = higher student performance
- health and safety: renewable and non-toxic materials
- reduce energy by up to 50%
- green buildings don't necessarily cost more to build; lower life cycle cost
- educational opportunity: teaches users how to live and learn more sustainably

how?

- great buildings are the result of great clients
- successful projects are the result of an effective collaboration between architect and client

High Performance Schools

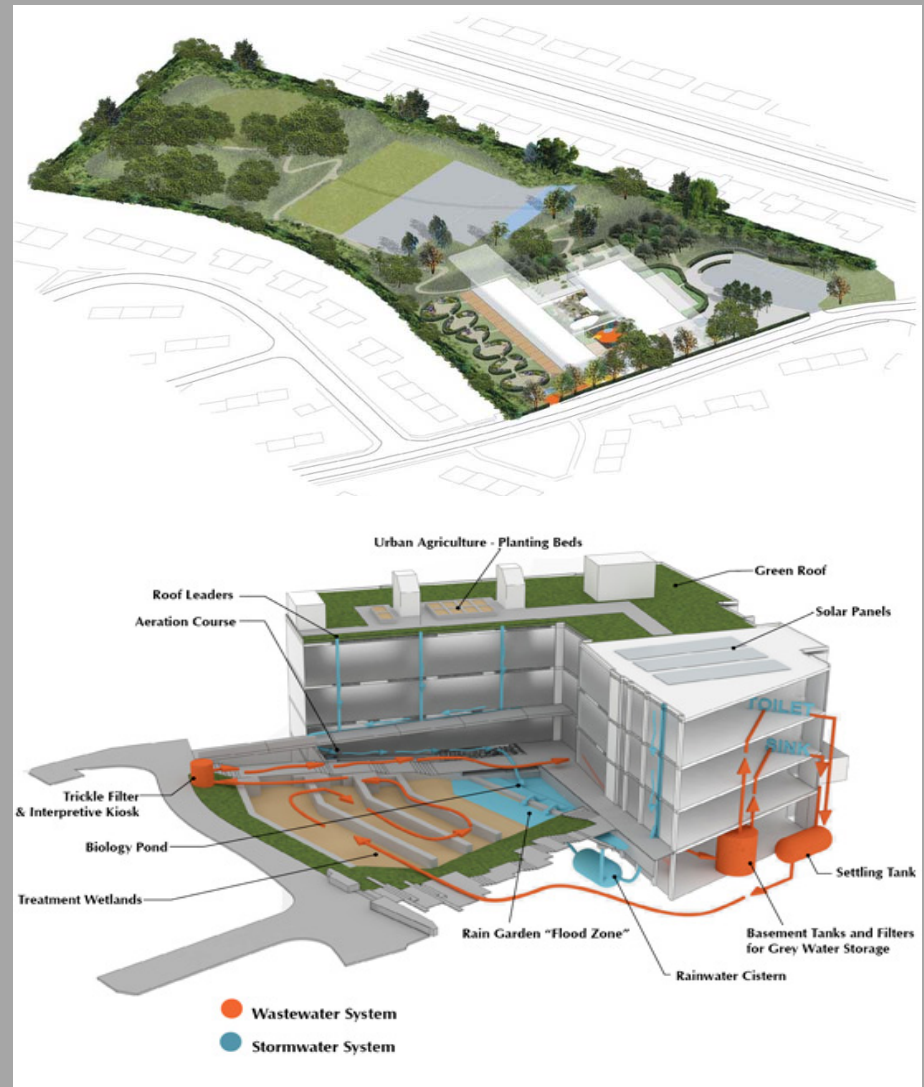
- environmentally responsive site planning
- daylight harvesting
- high performing building envelope
- materials chosen using life cycle cost
- highly efficient heating, cooling, and lighting
- systems fueled by renewable resources
- systems are commissioned to operate optimally



a sustainable school "...has three distinct attributes: it is designed to create a healthy and comfortable learning and working environment; it is less costly to operate than a conventional school over the life of the building; and it is constructed to conserve important resources such as energy and water."

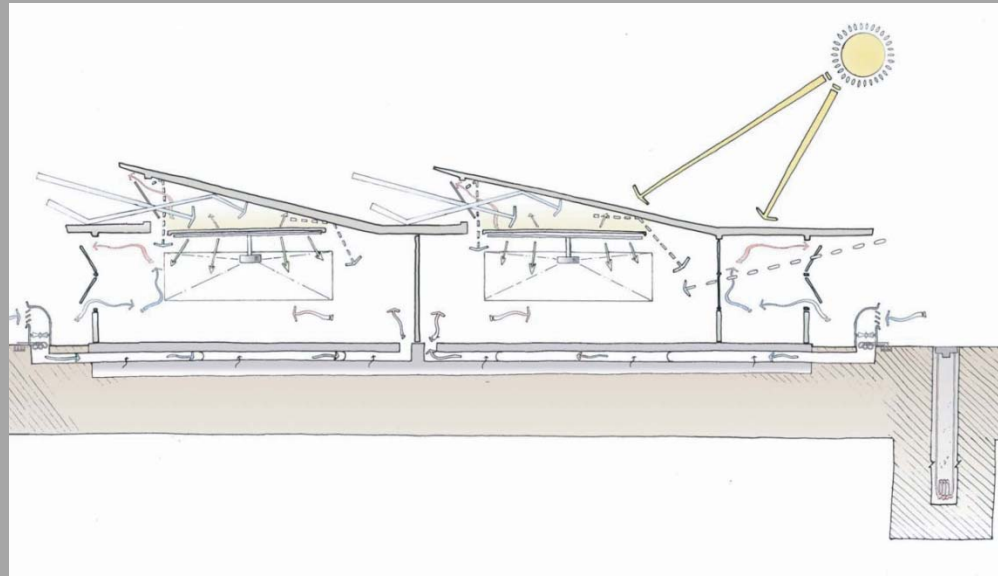
Site & Water

- no development on wetlands or parkland
- reduce footprint
- storm water treatment or detention on site
- erosion control
- reduce heat islands
- avoid light pollution
- water efficiency; use reduction



Daylighting

- daylight is a critical human need and required in most instructional spaces in NYS
- glare-free daylight can be provided by proper use of overhangs, light shelves, window treatments and window tinting
- proper ventilation is a key companion to day-lit spaces
- turn off the lights if daylight is adequate!

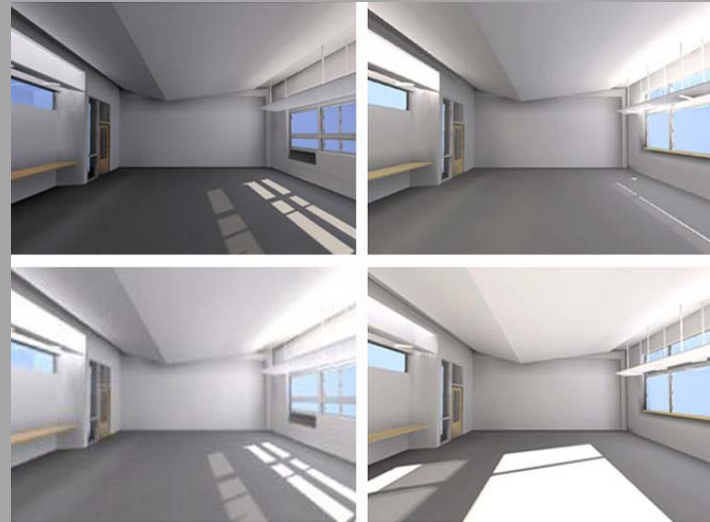
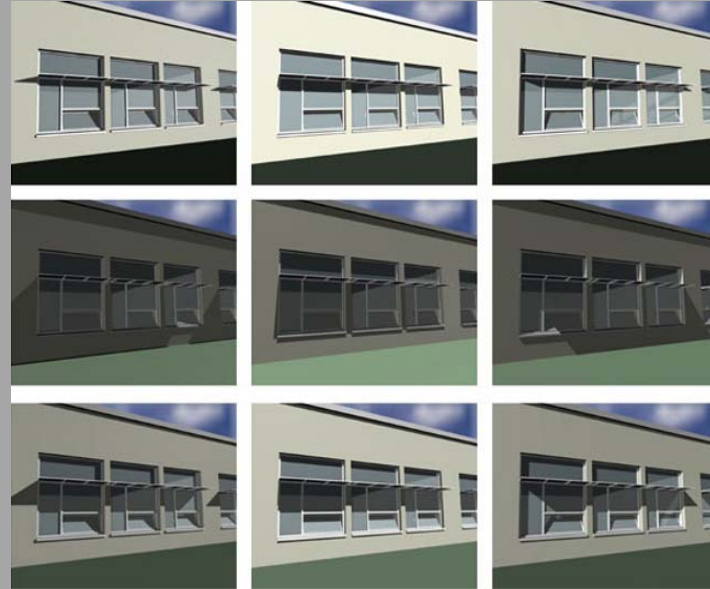


daylighting

- indirect lighting
- glare control
- light shelf

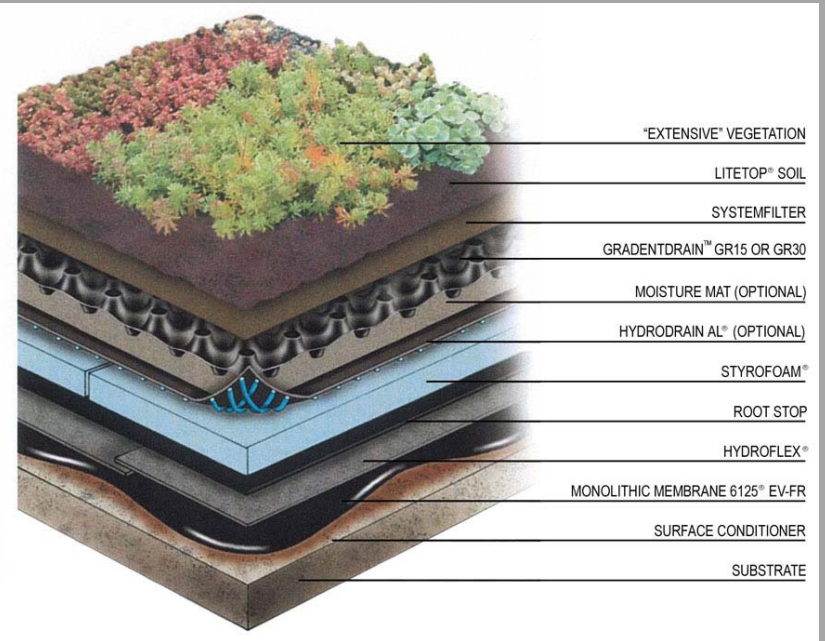


Daylight Modeling



Green Roofs

- green roofs have living vegetation over a waterproof membrane
- in use worldwide
- require some maintenance (like all roof systems)
- don't need mowing!

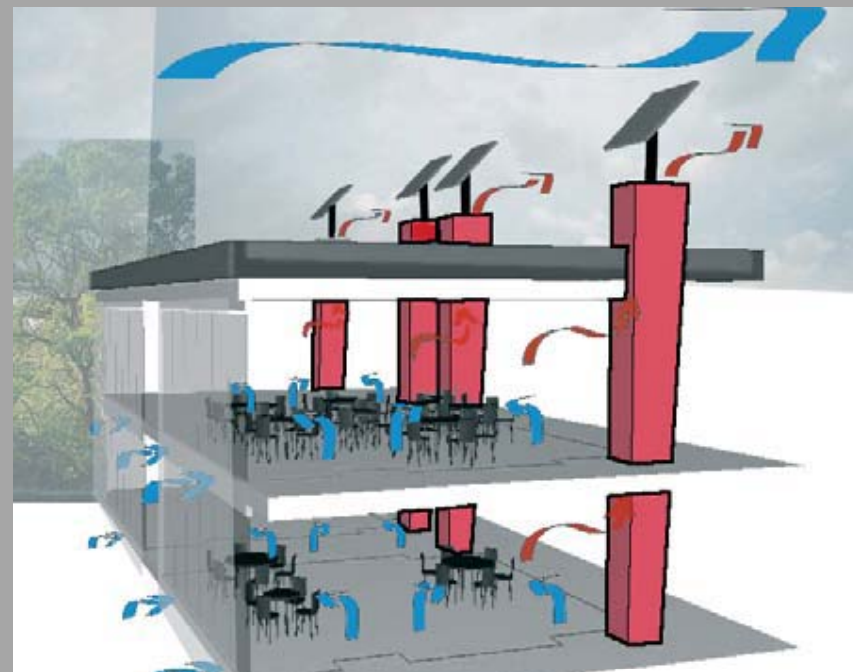
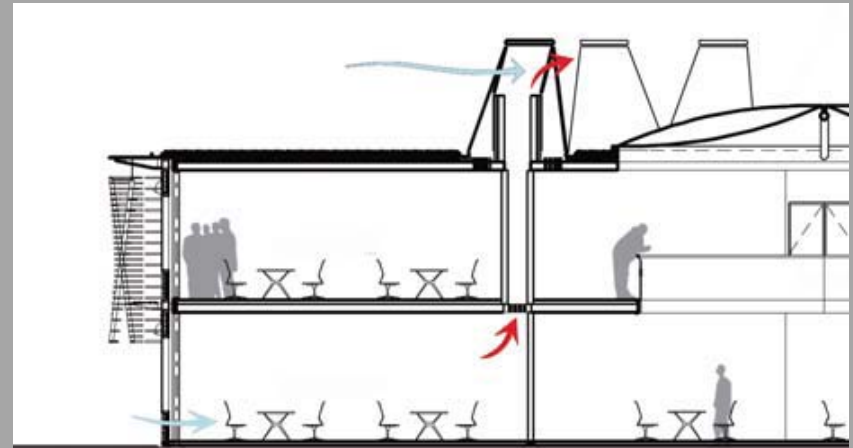


Materials

- recycled content – post-consumer or post-industrial / pre-consumer
- salvaged materials
- low energy consumption used in the manufacturing
- low transportation costs used in getting material to the jobsite – locally produced
- high renewable content – managed growth or certified wood.
- bio-based materials – e.g., wheat grass cabinetry
- healthier - low/no off-gassing

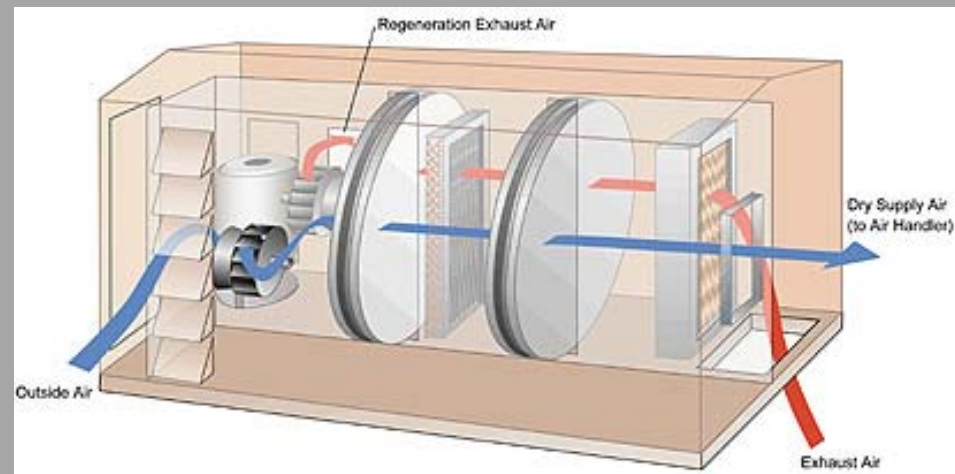
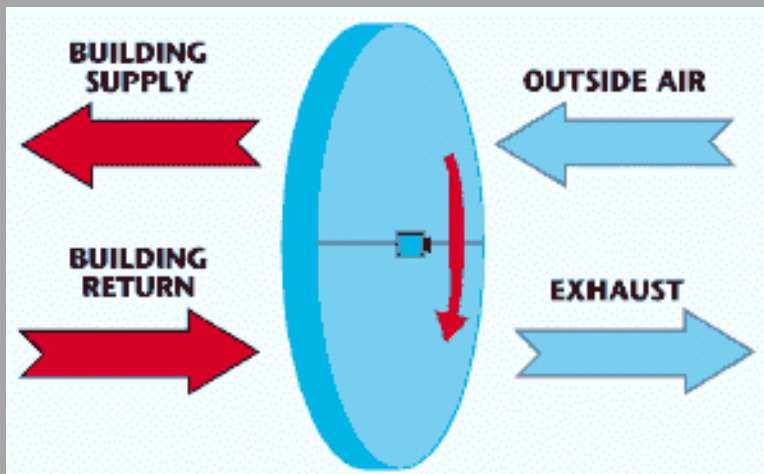
Fresh Air

- natural ventilation for cooling
- combination of lighting and ventilation



Heat Recovery

- recover energy lost in building exhaust systems
- reheat/cool outdoor ventilation air



Renewable Energy

- photovoltaic
- wind
- fuel cells
- micro-turbines



Sustainability: Jacob Burns Media Arts Lab



The Media Arts Lab at the Jacob Burns Film Center received LEED Gold in 2010 and promotes a well rounded approach to sustainability. Key sustainable features include:

- geothermal wells
- photovoltaic panels
- green roofing system
- low/no flow plumbing fixtures
- local recycled building materials
- "Green Fact" signs



Sustainability: Post Road Elementary School



In 2010 this new building earned an Energy Star Rating of 100, making it the most energy efficient public school building in New York State at the present time. Major sustainable design elements include:

- geothermal heating and cooling
- green roof system
- solar photovoltaic roof top panels
- extensive day lighting
- low impact plumbing fixtures
- recycled and natural materials



Energy Savings & Project Financing

KG&D is the only firm in the region that is combining Energy Performance Contracts and Capital Improvement Projects as an alternative finance method for the delivery of large renovations projects.

- Eastchester Union Free School District - completed, \$7 mil EPC / \$12.8 mil bond
- Orange-Ulster BOCES – completed, \$5.7 mil EPC / \$21 mil bond
- Valhalla Union Free School District – in construction, \$3.7 mil EPC
- Katonah Lewisboro Public Schools – in construction, \$2.6 mil EPC



Katonah Lewisboro Athletic Fields



Brewster Central School District Athletic Field



KG&D architects

Listen, *Imagine*, Build.