

BRIGHTON CENTRAL SCHOOLS

Pre-Referendum Phase Planning Brookside Redevelopment - Board of Education Meeting

January 26, 2016



AGENDA

1. Introductions
2. Preliminary Project Cost and Program Overview
3. What is a Green School?
4. What Does Sustainability Mean to Brighton Central Schools?
5. Overview of Green Rating Systems and Awards for this Project
6. Closing Discussion

PROJECT COST

BRIGHTON CENTRAL SCHOOL DISTRICT
 BRIGHTON PRIMARY SCHOOL FEASIBILITY STUDY
 3-Dec-14

Brookside:

BUILDING COSTS	
Architectural / Structural / Asbestos	21,063,000
Plumbing	2,160,000
HVAC	5,989,500
Electrical	3,458,000
Design and Construction Contingency	6,534,100
Building Escalation (9%)	3,528,414
SUB-TOTAL BUILDING COST	42,733,014
INCIDENTAL COSTS	
Site Work	3,029,091
Furniture & Equipment	775,000
Move Costs	75,000
Soft Costs	8,546,603
Incidental Contingency	2,485,139
Incidental Escalation (9%)	1,341,975
SUB-TOTAL INCIDENTAL COSTS	16,252,807
GRAND TOTAL PROJECT COST	58,985,821

Rounded **59,000,000**

VOTER AUTHORIZATION:

\$63,100,000

1. **EXPENSES:**

Project Costs (Construction & Incidentals):	\$	58,985,821
DASNY Fees:		1,625,000
Capitalized Interest Expense:		2,489,179
TOTAL EXPENSES:	\$	63,100,000

2. **REVENUES:**

Capital Reserves:	\$	-
Bonding Amount:		63,100,000
TOTAL REVENUES:	\$	63,100,000

3. **ESTIMATED BOND PERCENTAGE:**

26.6%

4. **2014-15 ESTIMATED BUILDING AID RATIO:**

73.7%

*Information provided from the Feasibility/Master Plan Report issued December 9, 2014

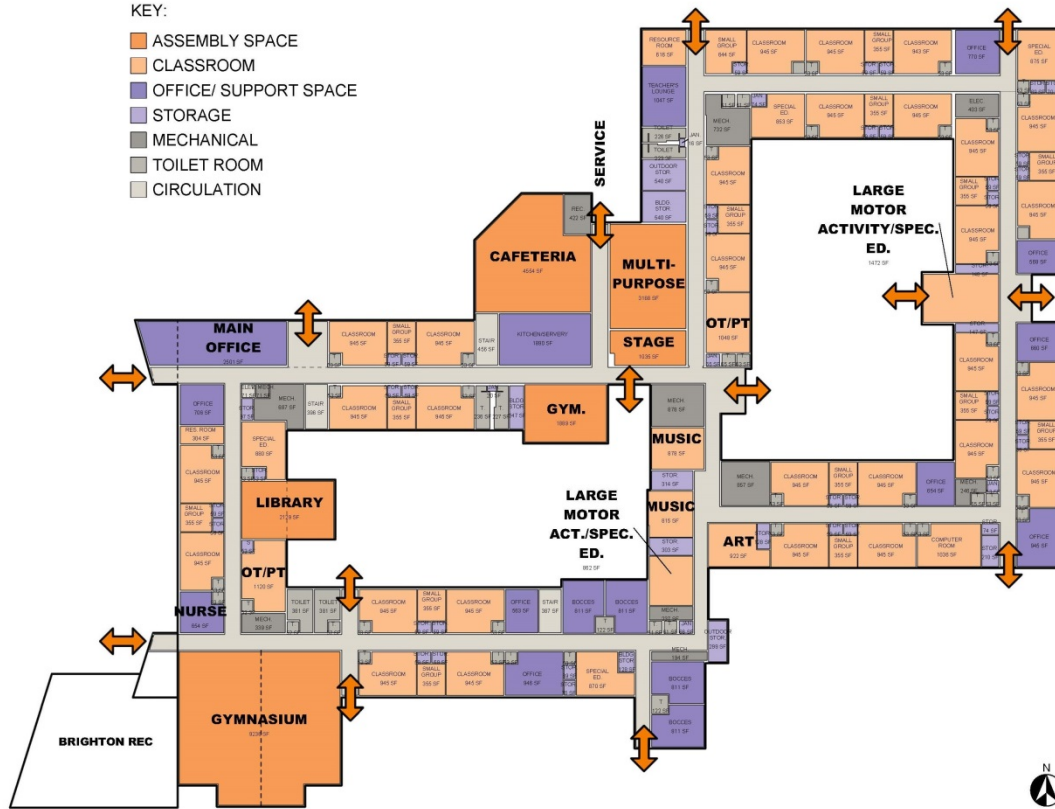
PROGRAM



PROGRAM

KEY:

- ASSEMBLY SPACE
- CLASSROOM
- OFFICE/ SUPPORT SPACE
- STORAGE
- MECHANICAL
- TOILET ROOM
- CIRCULATION



FIRST FLOOR PLAN



SECOND FLOOR PLAN

WHAT IS A GREEN SCHOOL?

A Green School... :

- Utilizes **TOXIN-FREE MATERIALS AND CLEANING** to prevent environmental and human health concerns
Eliminates the use of materials and cleaning agents that contain toxins such as PVC, urea-formaldehyde, and VOCs
- Uses **ENERGY AND WATER EFFICIENT BUILDING SYSTEMS**
Mechanical, electrical, and plumbing systems installed reduce the school's dependency on the grid and natural resources
- Is built with **ENVIRONMENTALLY-CONSCIOUS MATERIAL SELECTIONS**
Materials contain recycled content, are extracted and manufactured locally, and/or are rapidly renewable
- Participates in **WASTE DIVERSION**
Diverts waste from landfill not only during construction, but through programs such as composting & recycling during school operations
- Is **HEALTH AND FITNESS AWARE**
Addresses integrated pest management, moisture and mold concerns, student health, nutrition, acoustics, and daylighting
- Focuses on **INDOOR AIR QUALITY**
Promotes occupant health and productivity reducing asthma attacks and improving test scores
- Incorporates **ENVIRONMENTAL EDUCATION** into the course curriculum
Uses sustainable principles to develop STEM knowledge and thinking skills
- Promotes the use of **ALTERNATIVE TRANSPORTATION**
Encourages carpooling, biking, and walking to school in addition to employing "no idling" policies for buses



WHAT DOES SUSTAINABILITY MEAN TO BRIGHTON CSD?

Regionally Produced Building Materials

Recycled Content Building Materials

Promotes "Green" Education

Improves Indoor Air Quality

Renewable Resources

Energy Efficient

Water Efficient

Utilizes Daylighting

Recycling Programs

Reduces Health Concerns

Improves Acoustical Performance

Alternative Forms of Transportation

Reduces Heat Island Effect

Provides Outdoor Views

Native Landscaping

"Green" Vehicles

Manages Waste

Green Power

Green Cleaning

Material Durability

Reduces Light Pollution

Commissioning of Building

Refrigeration Management



RATING SYSTEMS EVALUATED FOR THIS PROJECT





The Living Building Challenge is an attempt to dramatically raise the bar from a paradigm of doing less harm to one in which we view our role as steward and co-creator of a true Living Future. The Challenge defines the **most advanced measure of sustainability in the built environment possible today** and acts to rapidly diminish the gap between current limits and the end-game positive solutions we seek.



Omega Center for Sustainable Living
Rhinebeck, NY
6,250 SF

A project achieves Living Certification or Living Building Certification by attaining all Imperatives assigned to its Typology. **All twenty Imperatives are required for buildings**, fifteen for renovations and seventeen for landscape and infrastructure projects.

IMPERATIVE		Preliminary Audit	Final Audit
01	Limits to Growth	x	
02	Urban Agriculture		x
03	Habitat Exchange	x	
04	Human Powered Living	x	
05	Net Positive Water		x
06	Net Positive Energy		x
07	Civilized Environment	x	
08	Healthy Interior Environment		x
09	Biophilic Environment	x	
10	Red List	x	
11	Embodied Carbon Footprint	x	
12	Responsible Industry	x	
13	Living Economy Sourcing	x	
14	Net Positive Waste		x
15	Human Scale + Humane Places		x
16	Universal Access to Nature and Place	x	
17	Equitable Investment		x
18	JUST Organizations	x	
19	Beauty + Spirit		x
20	Inspiration + Education	x	



“Maximize your gains, minimize your losses.”

Passive Building Design:

Passive House is a design methodology and energy standard that champions a super insulated, airtight home or building that **uses 70-90% less energy for heating and cooling** than a conventional new home or building. The Passive House Institute US describes it as “the most rigorous building energy standard in the world”.

Passive Building Design Principles:

- Employs continuous insulation through its entire envelope **without any thermal bridging**;
- Building envelope is **extremely airtight**, preventing infiltration of outside air and loss of conditioned air;
- Employs high-performance windows (typically triple-paned) and doors;
- Uses some form of balanced heat- and moisture-recovery ventilation and **uses a minimal space conditioning system**;
- **Solar gain is managed** to exploit the sun’s energy for heating purposes and to minimize it in cooling seasons.



Hollis Montessori School
Hollis, NH
11,000 SF



The Goal:

The US Department of Education's Green Ribbon Schools program is to inspire schools and districts to strive for excellence by highlighting exemplary practices and resources that all can employ. The ED-GRS program recognizes schools taking a comprehensive approach to **greening their school by incorporating environmental learning with improving environmental and health impacts.**

The Green Ribbon Schools program is NOT:

- A certification system;
- A tracking system;
- A rating system;
- A grant program.

This Program Evaluates based on three pillars:

- I. Reducing **environmental impact** and costs;
- II. Improving **health and wellness**;
- III. Providing effective **environmental and sustainable education** incorporating STEM, civic skills and green career pathways.



Anne Hutchinson Elementary School
Eastchester Union Free School District
Eastchester, NY

These pillars evaluate:

- Energy efficiency and greenhouse gases;
- Water efficiency and conservation;
- Waste reduction;
- Alternative transportation;
- Indoor environmental quality;
- Nutrition and fitness standards;
- Interdisciplinary learning and STEM programs;
- Community and civic engagement.



“To make every school an ideal place to learn.”

The Collaborative for High Performance Schools (CHPS) is leading a national movement to improve student performance and the entire educational experience by building the best possible schools. To achieve this goal, we maintain the nation’s most authoritative criteria for building **energy efficient, cost effective schools.**

This System Evaluates:

- Site;
- Water;
- Energy;
- Materials;
- Indoor Environmental Quality;
- Operations and Maintenance;
- Innovation.

Environment + Health + Student Performance

Core Values of CHPS:

- All schools can be high performance.
- Schools are unique environments.
- State-based decision-making and national collaboration are powerful tools for change.
- High performance schools bring real benefits.
- Working collaboratively produces the best results for our schools and students.



East Hampton High School
East Hampton Union Free School District
East Hampton, NY



“A green school is a healthy environment conducive to learning while saving energy, resources and money..”

The LEED for Schools Rating System recognizes the unique nature of the design and construction of K-12 schools. Based on LEED for New Construction, it addresses issues such as **classroom acoustics, master planning, mold prevention, and environmental site assessment**. By addressing the uniqueness of school spaces and children's health issues, LEED for Schools provides a unique, comprehensive tool for schools that wish to build green, with measurable results. LEED for Schools is the recognized third-party standard for high performance schools that are healthy for students, comfortable for teachers, and cost-effective.



HW Smith School – LEED Silver
Syracuse City School District
Syracuse, NY
144,570 SF

This System Evaluates:

- Location & Transportation;
- Sustainable Sites;
- Water Efficiency;
- Energy and Atmosphere;
- Material and Resources;
- Indoor Environmental Quality;
- Innovation.

**THE CENTER
FOR GREEN SCHOOLS**



K12 SUSTAINABLE DESIGN RATING SYSTEMS

Site/Location Water Energy Materials Indoor Environmental Quality O&M Innovation



Living Bldg. Challenge



Passive House



LEED for Schools



CHPS



Green Ribbon Schools

- **Limits to Growth**
- Urban Agriculture
- Habitat Exchange
- Human Powered Living
- Net Positive Water
- Net Positive Energy
- Civilized Environment
- Healthy Interior Environment
- Biophilic Environment
- Red List
- Embodied Carbon Footprint
- Responsible Industry
- Living Economy
- Sourcing
- Net Positive Waste
- Human Scale+Humane Places
- Univ.Access to Nature & Place
- Equitable Investment
- JUST Organizations
- Beauty + Spirit
- Inspiration + Education

- Heating
- Cooling
- Airtightness
- Renewable Energy
- Thermal Comfort
- Occupant Control

- Alternative Transportation
- Joint Use of Facilities
- Light Pollution Reduction
- Reduce Heat Island Effect
- Site Selection and Development
- Stormwater Management
- Indoor Water Use Reduction
- Outdoor Water Use Reduction
- Water Metering
- Commissioning of Building
- Energy Efficiency
- Green Power
- Refrigeration Management
- Renewable Energy
- Building Life-Cycle Impact Reduction
- Collection & Programs; Recycling
- Construction Waste Management
- Bldg. Product Disclosures-EPDs
- Bldg. Product Disclosures-Ingred.
- Bldg. Product. Disclosures-Raw Mat.
- Acoustical Performance
- Chemical & Pollutant Source Cont.
- Constr. Indoor Air Quality Plans
- Daylighting and Views
- Indoor Air Quality
- Low-Emitting Materials
- Mold Prevention
- No Smoking Policy
- Thermal Comfort
- Green Cleaning Program
- Sustainability Inc. into Education

- Alternative Transportation
- Joint Use of Facilities
- Light Pollution Reduction
- Reduce Building Footprint
- Reduce Heat Island Effect
- Reduce Parking Area
- **Site Selection & Development**
- Stormwater Management
- Indoor Water Use Reduction
- Outdoor Water Use Reduction
- Commissioning of Building
- Energy Efficiency
- Energy Meterg. & Monitorg. Syst.
- ENERGY STAR Appl. & Equipment
- Renewable Energy
- Building Reuse
- Collection & Programs; Recycling
- Construction Waste Management
- Material Selection: Lifecycle Cost
- Acoustical Performance
- Chemical & Poll. Source Control
- Constr. Indoor Air Quality Plans
- Daylighting and Views
- Indoor Air Quality
- Low-Emitting Materials
- Thermal Comfort
- Green Cleaning Program
- Integrated Pest Management
- Alt. Fuel Buses & Transportation
- Anti-idling Measures
- Red Cross /Comm. Cntr. Location

- Alternative Transportation (I)
- Stormwater Management (I)
- Audit of Plumbing Sys., Leaks (I)
- Indoor Water Use Reduction (I)
- Outdoor Water Use Reduction. (I)
- Plumb. Fixtures. Cleaned Reg (I)
- Potable Water Meets Stds. (I)
- Energy Efficiency (I)
- ENERGY STAR Appl. & Equip. (I)
- Greenhouse Gas Em. Reduction. (I)
- Renewable Energy (I)
- Cert. Furniture Purch. Prog. (I)
- Collection & Progs.; Recycling (I)
- Hazardous Waste Reduction (I)
- Asthma Mgt. Programs (II)
- Chem. & Poll. Source Control (II)
- Indoor Air Quality (II)
- Low-Emitting Materials (II)
- Mold Prevention (II)
- No Smoking Policy (II)
- Chlorine-free Paper for Printing (I)
- Green Cleaning Program (I)
- Integrated Pest Management (II)
- Alt. Fuel Buses and Transp. (I)
- Anti-idling Measures (I)
- CHPS or LEED Cert. Projects (I)
- Fitness & Wellness Programs (II)
- Organic & Sust. Food Progs. (II)
- UV Safety Programs (II)
- Sust. Inc. into Education (III)

K12 SUSTAINABLE DESIGN RATING SYSTEMS

Overlapping Strategies

LEED + CHPS + GRS

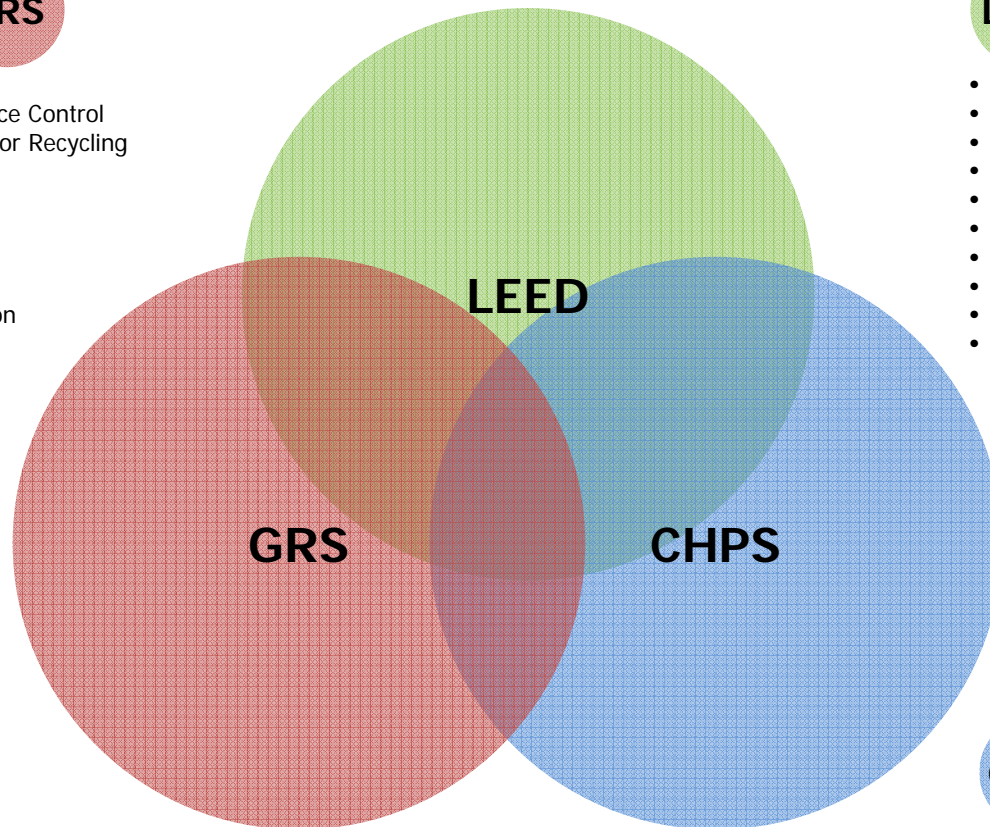
- Alternative Transportation
- Chemical and Pollutant Source Control
- Collection of and Programs for Recycling
- Energy Efficiency
- Green Cleaning Program
- Indoor Air Quality
- Indoor Water Use Reduction
- Low-Emitting Materials
- Outdoor Water Use Reduction
- Renewable Energy
- Stormwater Management

LEED + CHPS

- Acoustical Performance
- Commissioning of Building
- Construction Indoor Air Quality Plans
- Construction Waste Management
- Daylighting and Views
- Joint Use of Facilities
- Light Pollution Reduction
- Reduce Heat Island Effect
- Site Selection and Development
- Thermal Comfort

LEED + GRS

- Mold Prevention
- No Smoking Policy
- Sustainability Incorporated into Education



CHPS + GRS

- Alternative Fuel Buses and Transportation
- Anti-idling Measures
- ENERGY STAR Appliances and Equipment
- Integrated Pest Management

RECOMMENDATION



Our recommendation is that the LEED for Schools Rating System be utilized as a benchmark system for sustainability. As a balanced and multi-faceted system, LEED provides a opportunity for operational energy savings over the lifecycle of the building as well as meaningful and measurable improvements across an array of categories that positively impact human health and the environment. Furthermore, commitment to utilize the “School as a Teaching Tool” opportunities within the system will leverage educational opportunities embedded in the project to positively impact the many generations of students that will attend Brookside School.

We recommend the project target base level LEED certification and, working together with the District and project stakeholders, we will establish specific sustainability goals.