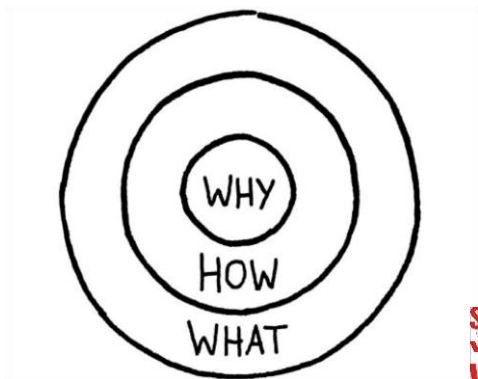


An Introduction: Sustainable Facilities

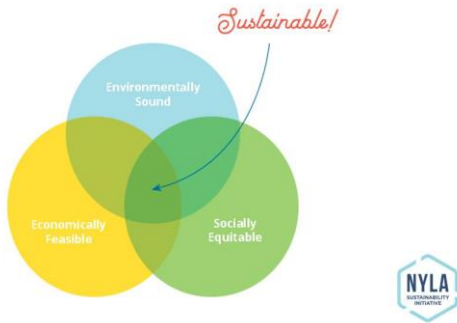


Rebekkah Smith Aldrich | Coordinator for Library Sustainability | Mid-Hudson Library System (NY)

- What is "sustainability"?
- Existing Buildings
- Renovation & New Construction
- Funding Sustainable Facilities



Triple Bottom Line





Sustainable thinking **aligns** a library's core values and resources with the local and global community's **right to endure, bounce back from disruption** and to thrive by bringing **new and energetic life** to fruition **through choices made in all areas** of library operations and outreach.



Buildings are for People

"In addition to having positive impacts on the earth and the long-term financial bottom line, **truly sustainable projects must benefit the people** that live in, work in, and use them."

Building for People: Integrating Social Justice into Green Design.
Environmental Building News, October 2009

Buildings in the U.S.

Buildings consume:

- 40% of all energy used
- 70% of electrical energy use
- 17% of all fresh water
- 25% of wood produced
- Buildings produce 38% of CO₂ emissions
- Buildings generate 30% of waste in landfills

Source: Environmental Protection Agency (EPA)



"3. Sustainability

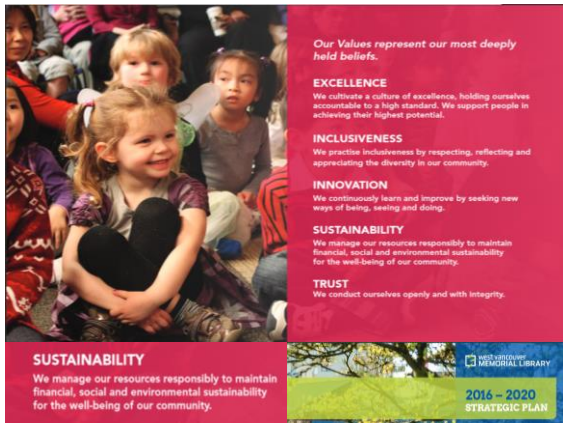
New Landmark Libraries must be sustainable, particularly with regard to **(1)** site selection and development; **(2)** water efficiency; **(3)** energy use; **(4)** materials and resources used; **(5)** indoor environmental quality; and **(6)** ongoing education, outreach, and operations"

Making the Case

① Economics

② Health

③ Personal Impact



Climate Smart Community Library Pledge

September 16, 2019 Trustee Paul Werhowsky moved and Trustee Edwin Poll seconded that:

WHEREAS, the City of Kingston passed a Climate Smart, Green Jobs Pledge on October 6, 2009 and Kingston Library would like to show support for that Pledge and;
WHEREAS, the Board of Trustees of the Kingston Library understands that climate change poses a real and increasing threat to our local and global environments which is primarily due to the burning of fossil fuels; and

WHEREAS, the effects of climate change will endanger the world's infrastructure, economy and livelihoods; harm farms, orchards, ecological communities, including native fish and wildlife populations; spread invasive species and exotic diseases; reduce drinking water supplies and recreational opportunities; and pose health threats to our community's citizens; and

WHEREAS, we believe that our local response to climate change provides us with an unprecedented opportunity to save money, and to contribute to livable, energy-independent and secure communities, and vibrant innovation economies; and

WHEREAS, we believe the scale of greenhouse gas (GHG) emissions reductions required for climate stabilization will require sustained and substantial efforts; and

WHEREAS, we believe that even if emissions were dramatically reduced today, communities would still be required to adapt to the effects of climate change for decades to come,

WHEREAS, we understand that public libraries are good stewards of public dollars and therefore should investigate and invest in energy efficient cost saving options,



Sustainability Committee

- Lowering the expense to the Library of energy usage
- Increasing the efficiency of energy usage, including through such means as adding insulation, sealing the building's envelope and evaluating the efficacy of existing equipment
- Exploring new technology and alternative forms of energy, including renewable sources of energy such as geothermal and solar energy
- Seeking to reduce the Library's "carbon footprint" by lessening the Library's direct and indirect reliance on fossil fuels
- Fostering the awareness of the Library Board, Staff, patrons and the public at large of the Committee's work and of issues and learning in the energy field in general
- Recommending improvements that are budget neutral with costs offset by government grants and loans, public contributions, fund raising and realizable savings to the Library



Sustainable Facilities

EXISTING BUILDINGS

Green Cleaning



Fayetteville Public Library,
"Let Green Creep,"
Library Journal, 5.29.2010

1. Get rid of harsh chemicals
2. Use a simple and effective basic cleaning product
3. Buy specific cleaning agents that are certified green
4. Use microfiber cloths
5. HEPA filter vacuum
6. Track off mats (6 feet)



WESTHAMPTON PUBLIC LIBRARY
Green Cleaning Policy

This Policy and Plan addresses environmental best practices for cleaning the interior of Westhampton Public Library. Specifically, it addresses purchasing sustainable cleaning, hard-floor and carpet products, and entryway systems; procuring sustainable cleaning equipment; developing and implementing standard operating procedures for effective cleaning; promoting and improving hand hygiene; developing guidelines for handling cleaning chemicals; developing staffing and employee training requirements; collecting and addressing occupant feedback; and establishing procedures for use of chemical concentrates and dilution systems. The Westhampton Public Library is located at 1 North Road, Westhampton, MA 01027.

1.0 Goals

To reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological, and particulate contaminants, which adversely affect air quality, human health, building finishes and systems, and the environment, Westhampton Public Library has developed this Green Cleaning Policy.

2.0 Scope

- 2.1 Purchasing Green Cleaning Products and Equipment
 The Westborough Public Library endorses purchasing green products for cleaning the interior of the building and the grounds. Green products are those that are safe and/or energy efficient and environmentally sound. (For a complete list of purchasing activity for the entire building and associated grounds, please refer to the "Sustainable Purchasing Policy, Westborough Public Library.")
- 2.1.1 Cleaning, hard floor and carpet care products used in LEED EB O&M EQ credit 3-4.3.6, and adhere to the Green Cleaning Library. The Library uses only non-toxic, bio-degradable products for cleaning and sanitizing.
- 2.1.2 Cleaning Equipment: The Westborough Public Library will ensure that all cleaning equipment used or exceeds the current standards (as outlined in the sustainability criteria for LEED EB O&M EQ credit 3-4.3.6). When purchasing cleaning equipment, the Westborough Public Library will only purchase U.S.-rated equipment, when available. The Library currently uses only brushes, sponge mops and a Miele 55-Axial vacuum.
- 2.2 Standard Operating Procedures



<https://greencleaning.ny.gov/>



Landscaping

- Native plants
- Wind breaks
- Porous pavers
- Rainwater catchments
- Rain gardens



Energy Hierarchy

1. Reduce the need for energy.
2. Use energy more efficiently.
3. Use renewable energy.
4. Any continuing use of fossil fuels should be clean and efficient.

Source: Local Government Position Statement on Energy (UK)

Energy Conservation

- ✓ Reduce your operating costs
- ✓ Impacts on indoor environmental quality (IEQ)
 - ✓ Thermal comfort
 - ✓ Air quality
- ✓ Be a leader in your community

Primary Conservation Opportunities

☐ Building Envelope

- ☐ Roof
- ☐ Windows
- ☐ Doors
- ☐ Walls & Foundation

☐ HVAC Equipment

☐ Occupant Behavior



MHLS "Useful life energy conservation standards":
<http://midhudson.org/nysconstructiongrant/>

Energy Audits

- | | |
|---------|--|
| Level 1 | <ul style="list-style-type: none"> • Brief on-site survey of the building • Savings and cost analysis of low-cost/no-cost Energy Conservation Measures (ECMs) • Identification of potential capital improvements meriting further consideration |
| Level 2 | <ul style="list-style-type: none"> • More detailed building survey • Breakdown of energy use • Savings and cost analysis of all ECMs • Identification of ECMs requiring more thorough data collection and analysis (Level 3) |
| Level 3 | <ul style="list-style-type: none"> • Attention to capital-intensive projects identified during the Level 2 audit • More detailed field analysis • More rigorous engineering analysis • Cost and savings calculations with a high level of accuracy |

Source: Procedures for Commercial Building Energy Audits, American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)

FlexTech Program

...customized energy efficiency analyses to help customers make informed energy decisions. For most studies, NYSERDA will contribute **up to 50% of the eligible energy study costs...**

Learn more: <http://www.nyserda.ny.gov/FlexTech>



Operations & Maintenance

LEED v4 for Operations & Maintenance: Existing Buildings		Project Name	Date
Project Checklist			
1	Location and Transportation	10	1
1.1	Access to Transportation	10	1
1.2	Access to Public Transportation	10	1
1.3	Access to Bicycles	10	1
1.4	Access to Pedestrians	10	1
1.5	Access to Bicycles and Pedestrians	10	1
1.6	Access to Bicycles and Pedestrians	10	1
1.7	Access to Bicycles and Pedestrians	10	1
1.8	Access to Bicycles and Pedestrians	10	1
1.9	Access to Bicycles and Pedestrians	10	1
1.10	Access to Bicycles and Pedestrians	10	1
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1.99	Access to Bicycles and Pedestrians	10	1
1.100	Access to Bicycles and Pedestrians	10	1

Certiably Sustainable

A clear path forward for your library



Archived Webinar: <http://bit.ly/2mUBLCY>

Green Action Checklist

- ✓ Organizational Commitment
- ✓ Energy
- ✓ Materials Management – Waste & Recycling
- ✓ Materials Management – Purchasing
- ✓ Transportation
- ✓ Land Use
- ✓ Water

Archived Webinar: <http://bit.ly/2mUBLCY>

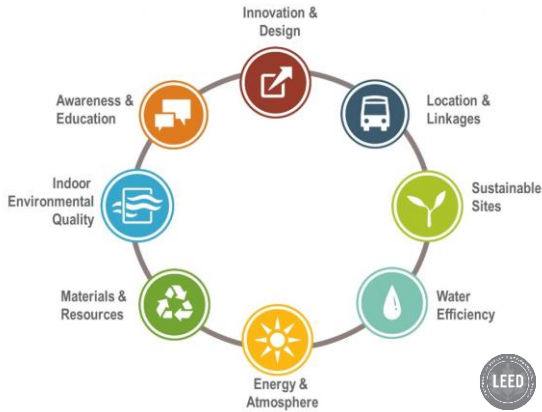


Sustainable Facilities

RENOVATION & NEW CONSTRUCTION



**LIVING
BUILDING
CHALLENGE** SM



Environmental Assessment Area	Points	Description
Project Management	50	Integrated Design Process, Meetings, Performance Goals, Environmental Management, Commissioning
Site	105	Development Area, Ecological Impacts, Stormwater Management, Landscaping, Exterior Light Pollution
Energy	330	Performance, Demand, Metering, Measurement and Verification, Building Envelope Envelope, Lighting, HVAC Systems and Controls, Efficient Equipment, Renewable Energy, Energy Efficient Transportation
Water	110	Consumption, Cooling Towers, Boilers & Water Heaters, Water Intensive Applications, Treatment, Alternate Sources, Metering, Irrigation
Materials & Resources	125	Building Assembly Interior Fit-outs, Fit-outs, Waste, Building Service, Life Plan, Resource Conservation, Building Envelope
Emissions	50	Heating, Greenhouse-gas Potential, Global Warming Potential
Indoor Environment	160	Ventilation, Source Control and Measurement, Lighting Design and Systems, Thermal Comfort, Acoustic Comfort
Total Points	1000	



	LIVING BUILDING CHALLENGE 3.1			
	BUILDINGS	RENOVATIONS	LANDSCAPE + INFRASTRUCTURE	
PLACE	SCALE JUMPING		SCALE JUMPING	01. LIMITS TO GROWTH
			SCALE JUMPING	02. URBAN AGRICULTURE
			SCALE JUMPING	03. HABITAT ECOSYSTEM
WATER			SCALE JUMPING	04. INHUMAN-POWERED LIVING
			SCALE JUMPING	05. NET POSITIVE WATER
ENERGY			SCALE JUMPING	06. NET POSITIVE ENERGY
				07. CIVILIZED ENVIRONMENT
HEALTH + HAPPINESS				08. HEALTHY INTERIOR ENVIRONMENT
				09. BIOPHILIC ENVIRONMENT
MATERIALS			SCALE JUMPING	10. RED LIST
				11. EMBODIED CARBON FOOTPRINT
				12. RESPONSIBLE INDUSTRY
EQUITY				13. LIVING ECONOMY SOURCING
				14. NET POSITIVE WASTE
			SCALE JUMPING	15. HUMAN SCALE + HUMANE PLACES
BEAUTY				16. UNIVERSAL ACCESS TO NATURE + PLACE
				17. EQUITABLE INVESTMENT
				18. JUST ORGANIZATIONS
				19. BEAUTY + SPIRIT
				20. INSPIRATION + EDUCATION





2030 Challenge

**"All new buildings and major renovations
will be carbon neutral by 2030."**

Who's on board?

US Conference of Mayors, American Institute of Architects (AIA),
Association of Collegiate Schools of Architecture (ACSA); U.S.
Environmental Protection Agency; American Society of Heating,
Refrigeration and Air-Conditioning Engineers (ASHRAE); American Society
of Interior Designers (ASID)...

Zero Energy Buildings (ZEB)

Zero (or "net zero") energy buildings:
Generate as much energy as consumed

U.S. Energy Independence and Security Act (2007):

All new federal buildings and major renovations meet the energy performance
standards targets of the 2030 Challenge.



“We have no more electric bills”

Energy Efficiency Project

@Peru Public Library (NY)

Total project cost = \$132,582

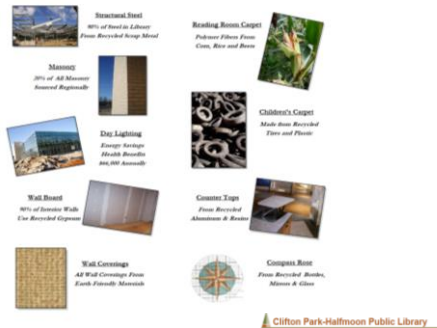
- 50% matching grant from NYS Construction Aid
- \$52,675 from NYSERDA
- Library came up with \$14,616 to “go off the grid”

Source: “Local library works off the grid,” PressRepublican.com



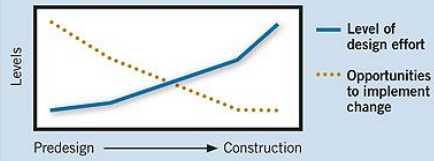
Educational Opportunity

Environmental Features



Integrated Building Design

FIGURE 3 Opportunities To Implement Cost Savings During the Design-Build Process



*A Whole Systems Approach: Integrated Building Design
Library Journal | 9.15.2011*

Sustainable Facilities

FUNDING



High-performing green buildings
provide the **best value for the
taxpayer and for the public** through
both life cycle cost benefits and
positive effects on human health and
performance.

Kevin Kampschroer, Chief Sustainability Officer, U.S. General Services Administration (GSA)
& Director of the Office of Federal High-Performance Green Buildings

Funding Sustainable Facilities

Maintenance/Replacement

- Library's Budget
- Library's Capital Fund
- Grant Writing
- *Last resort: Fundraising*

Renovation & Expansion

- Capital Fund
- Fundraising & Grant Writing
- Capital Bonds
(public libraries, not association)

Common Grant Sources

- State Aid for Public Library Construction
- Special Legislative Grants
- Dormitory Authority of the State of New York (DASNY):
 - Community Capital Assistance Program (CCAP)
 - State and Municipal Facilities Program (SAM)

NYS Energy & Research Development Authority (NYSERDA)

Program Opportunity Notices (PON)

- Clean Energy Communities Program (PON 3298)
- Rev1 - New Construction Program (PON 1601)
- Small Wind Turbine Incentive Program (PON 2439)
- Workforce Training: Building Operations and Maintenance (PON 3442)



Other Grant Sources

- Regional Economic Development Councils (NYS)
- Regional Community Foundation Designated Funds
- Banks & Credit Unions
- Family Foundations, example:
 - Stewart's Shops and the Dake Family Foundations



You've got to think about **big things** while you're doing **small things**, so that all the small things **go in the right direction**.

-Alvin Toffler , futurist

Archived Webinars

- Drafting a Basic Facility Plan
- Introduction to the State Aid for Public Library Construction Program
- Sustainable Facilities: An introduction

<http://midhudson.org> → Topics → Professional Development/Continuing Education



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Co-chair, Sustainability Initiative, **New York Library Association**
Founding Member, Sustainability Round Table, **American Library Association**
Sustainability Columnist, **Library Journal**

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Thank You

