LEED®

Leadership in Energy and Environmental Design

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LARAMIE COUNTY LIBRARY

Why care about Green?

"Treat the earth well. It was not given to you by your parents, it was loaned to you by your children."

-Kenyan Proverb

As seen at the American Museum of Natural History in New York City

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A Puzzlement

- Move back and forth
- Laramie County Library
- Design in 2004 – 2006
- Ballot issue: November 4, 2003
- Groundbreaking: March 15, 2006
- Grand opening: September 8, 2007
- Certification Level – Gold: June 2008

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What is LEED?

Program of US Green Building Council

- A community of leaders working to make green buildings available to everyone within a generation
- http://www.usgbc.org/
- Nationally accepted benchmark for the design, construction and operation of high performance green buildings

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Libraries in the forefront

- ALA mid-to-late 1990
- Educational institution
- Community visibility
- Civic responsibility

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To certify or not to certify

- Yes, there are costs.
- Regardless of costs you can build a sustainable building .
- *Costing Green: A Comprehensive Cost Database and Budgeting Methodology*, July 2004, Davis Langdon
- *Cost of Green Revisited*, July 2007, Davis Langdon

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Steps to LEED Certification

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Versions

- Going to v3 on April 27, 2009
- Existing programs can move
- Laramie County Library NCv2.1

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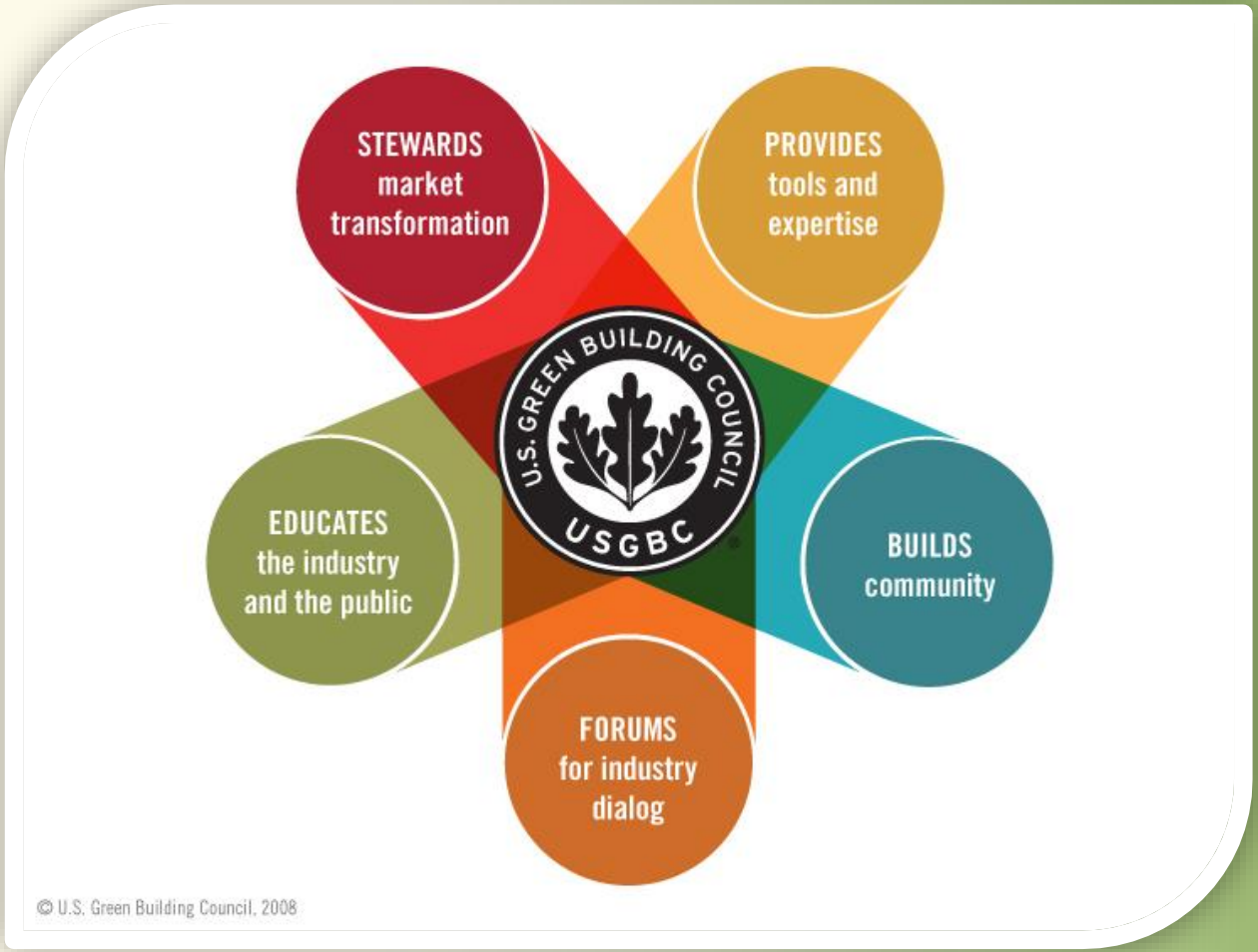
Goals similar to libraries



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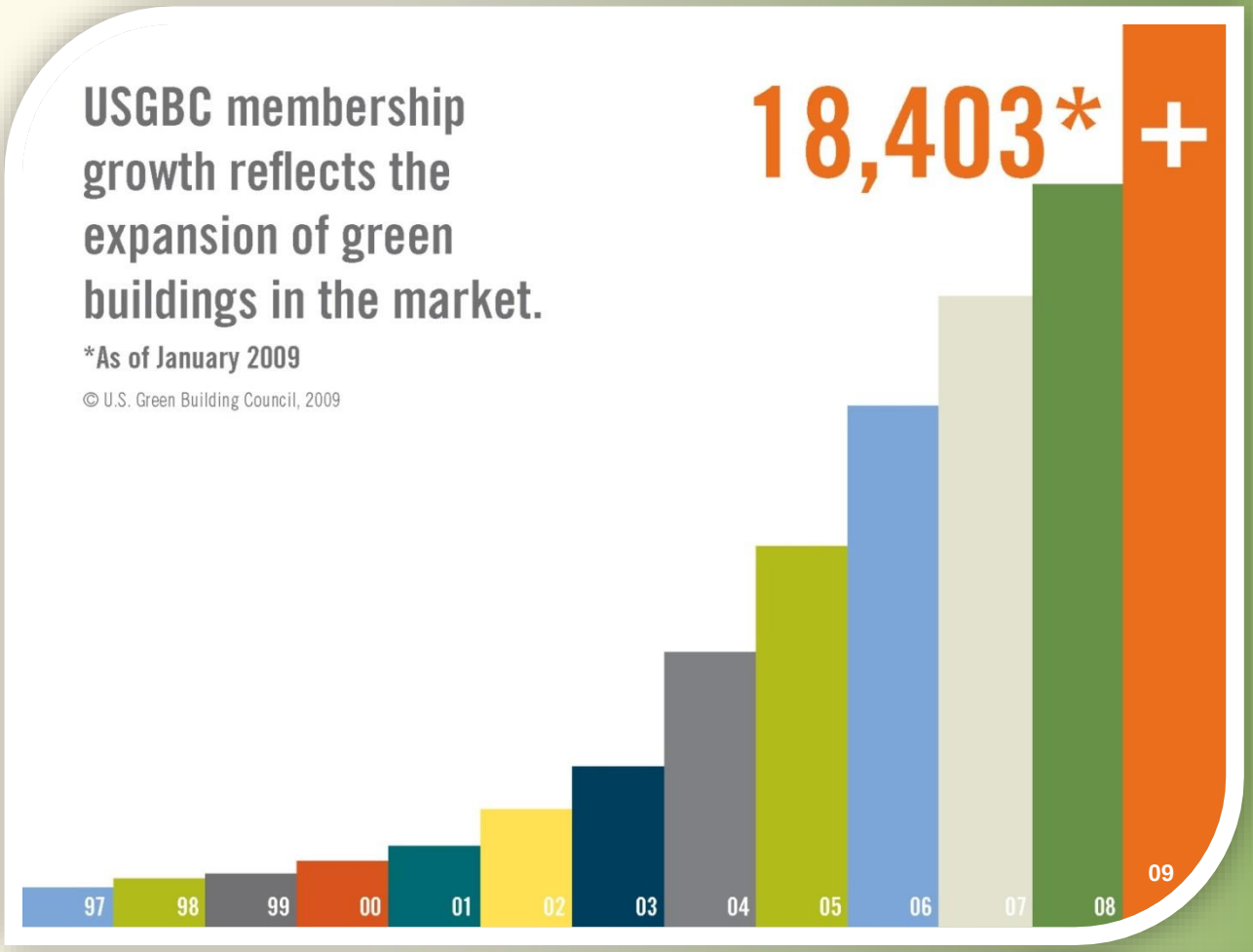
Growth



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USGBC has four levels of LEED:

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April 27, 2009 v3

- Total points available : 100

- Points needed for each level;
  - Certified 40–49
  - Silver 50–59
  - Gold 60–79
  - Platinum 80-100

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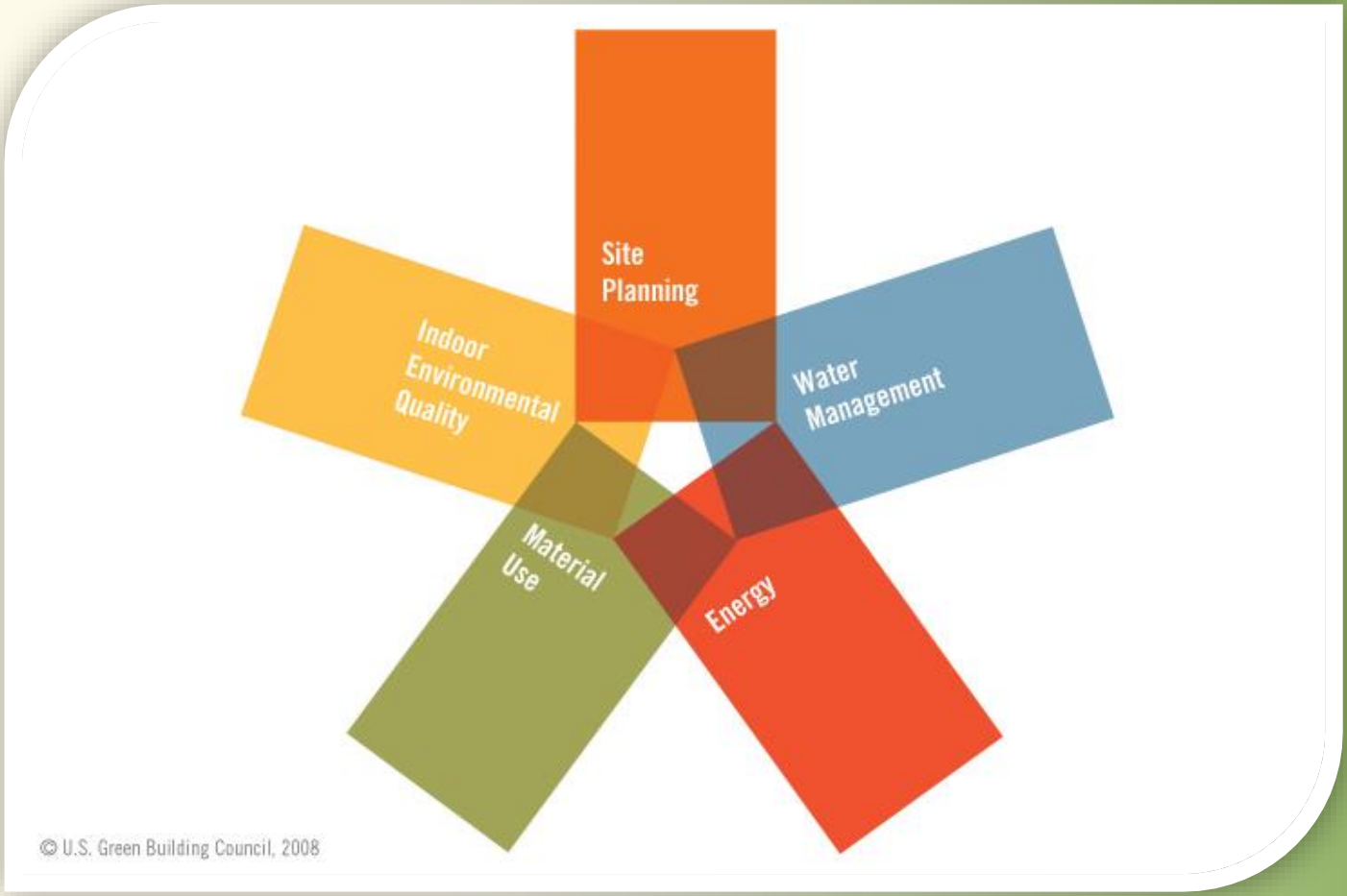
Components of a Green Building



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The team

- Owner
- Architect
- Consultants:
  - Subcontractors for architect
- Contractor
- Library players:
  - Public
  - Governmental officials
  - Staff

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Design Phase

- Sets the tone for the project
- Site selection
- Design
- Modeling
- Specification of products

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1-307-637-4500

Construction Phase

- Erosion and sediment control
- Recycling site and construction waste
- Pollution control
- Sustainable products
- Local /regional materials
- Recycled content in materials

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FCI Constructors: Ross Choate

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LEED - NCv2.1

Project Name Laramie County Library
Project # 05-100
Date: 6.6.06

ARCHITECTURAL ENERGY CORPORATION
Integrated Engineered Solutions

Y	M	N	Sustainable Sites		Notes:
Y			Prerequisite 1	Erosion and Sedimentation Control	Approved
X			Credit 1	Site Selection	Approved
X			Credit 2	Development Density	Approved
		X	Credit 3	Brownfield Redevelopment	
X			Credit 4.1	Alternative Transportation, Locate Near Public Transportation	Approved
X			Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	Approved
		X	Credit 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	
X			Credit 4.4	Alternative Transportation, Minimum or No New Parking	Approved
		X	Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	
X			Credit 5.2	Reduced Site Disturbance, Reduce Footprint & Increase Open Space	Approved
		X	Credit 6.1	Stormwater Management, No Net Increase or 25% Decrease	Denied
X			Credit 6.2	Stormwater Management, Treatment Systems	Approved
		X	Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Site Surfaces	
		X	Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof Surfaces	
		X	Credit 8	Light Pollution Reduction	
7	0	7	14 Possible		

Y	M	N	Water Efficiency		Notes:
X			Credit 1.1	Water Efficient Landscaping, Reduce by 50%	Approved
		X	Credit 1.2	Water Efficient Landscaping, Reduce Additional 50% or No Irrigation	
		X	Credit 2	Innovative Wastewater Technologies	
X			Credit 3.1	Water Use Reduction, 20% Reduction	Approved
X			Credit 3.2	Water Use Reduction, Additional 10% Reduction	Approved
3	0	2	5 Possible		

Y	M	N	Energy and Atmosphere		Notes:
Y			Prerequisite 1	Fundamental Building Systems Commissioning	Approved
Y			Prerequisite 2	Minimum Energy Performance	Approved
Y			Prerequisite 3	CFC Reduction in HVAC&R Equipment	Approved
X			Credit 1.1	Optimize Energy Performance, 12.5% new, 2.5% existing	Approved
X			Credit 1.2	Optimize Energy Performance, 17.51% new, 7.51% existing	Approved
X			Credit 1.3	Optimize Energy Performance, 22.51% New 12.51% Existing	Approved
X			Credit 1.4	Optimize Energy Performance, 27.51% New 17.51% Existing	Approved
X			Credit 1.5	Optimize Energy Performance, 32.51% New 22.51% Existing	Approved
X			Credit 1.6	Optimize Energy Performance, 37.51% New 27.51% Existing	Approved
		X	Credit 1.7	Optimize Energy Performance, 42.51% New 32.51% Existing	
		X	Credit 1.8	Optimize Energy Performance, 47.51% New 37.51% Existing	
		X	Credit 1.9	Optimize Energy Performance, 52.51% New 42.51% Existing	
		X	Credit 1.10	Optimize Energy Performance, 57.51% New 47.51% Existing	
		X	Credit 2.1	Renewable Energy, 2.5%-7.5% Contribution	
		X	Credit 2.2	Renewable Energy, 7.51%-12.5% Contribution	
		X	Credit 2.3	Renewable Energy, 12.51% Contribution	
X			Credit 3	Additional Commissioning	Approved
X			Credit 4	Ozone Depletion	Approved
		X	Credit 5	Measurement & Verification	
		X	Credit 6	Green Power	
8	0	9	17 Possible		

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Six categories

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation & Design Process

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Y	M	N	Materials and Resources		Notes:
Y			Prerequisite 1	Storage & Collection of Recyclables	Approved
		X	Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	
		X	Credit 1.2	Building Reuse, Maintain Additional 25% of Shell	
		X	Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	
X			Credit 2.1	Construction Waste Management, Salvage or Recycle 50%	Approved
X			Credit 2.2	Construction Waste Management, Salvage Additional 25%	Approved
		X	Credit 3.1	Resource Reuse, Specify 5% Reuse	
		X	Credit 3.2	Resource Reuse, Specify 10% Reuse	
X			Credit 4.1	Recycled Content, Specify 5% Recycled Content (FC + 1/2 PE)	Approved
X			Credit 4.2	Recycled Content, Specify 10% Recycled Content (FC + 1/2 PE)	Approved
X			Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	Approved
X			Credit 5.2	Local/Regional Materials, of 20% Above 50% Harvested Locally	Approved
		X	Credit 6	Rapidly Renewable Materials	
X			Credit 7	Certified Wood	Approved
7	0	6	13 Possible		

Y	M	N	Indoor Environmental Quality		Notes:
Y			Prerequisite 1	Minimum IAQ Performance	Approved
Y			Prerequisite 2	Environmental Tobacco Smoke (ETS) Control	Approved
X			Credit 1	Carbon Dioxide (CO_2) Monitoring	Approved
		X	Credit 2	Increase Ventilation Effectiveness	
X			Credit 3.1	Construction IAQ Management Plan, During Construction	Approved
X			Credit 3.2	Construction IAQ Management Plan, Prior to Occupancy	Approved
X			Credit 4.1	Low-Emitting Materials, Adhesives	Approved
X			Credit 4.2	Low-Emitting Materials, Paints	Approved
X			Credit 4.3	Low-Emitting Materials, Carpet	Approved
X			Credit 4.4	Low-Emitting Materials, Composite Wood	Approved
		X	Credit 5	Indoor Chemical and Pollutant Source Control	
		X	Credit 6.1	Controllability of Systems, Operable Window	
		X	Credit 6.2	Controllability of Systems, Individual Controls	
X			Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-2004	Approved
X			Credit 7.2	Thermal Comfort, Permanent Monitoring System	Approved
		X	Credit 8.1	Daylight and Views, Diffuse Sunlight to 75% of Space	
X			Credit 8.2	Daylight and Views, Direct Line of Site to 90% of Space	Approved
10	0	5	15 Possible		

Y	M	N	Innovation & Design Process		Notes:
X			Credit 1.1	Educational outreach- signage and tour	Approved
X			Credit 1.2	Process Water Treatment	Approved
X			Credit 1.3	Exceed MRc4	Approved
X			Credit 1.4	Exceed MRc5	Approved
X			Credit 2	LEED™ Accredited Professional	Approved
5	0	0	5 Possible		

	0 - 25	Insufficient
	26 - 32	Certified
	33 - 38	Silver
	39 - 51	Gold
	52 - 69	Platinum

Project Points	Maybe
40	0
Gold	

Project Notes:

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Challenges

- Lack of experienced professionals.
- Lack of capacity in the building trades to meet the demand for green building .
- Lack of data on green building performance.
- Lack of education about how to manage, operate, and inhabit green buildings.

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Rewards

- Environmentally friendly
- Public Stewardship
- Efficient use of energy
- Minimize use of water
- Healthier building for public and employees
- Maximize use of daylight
- Fiscally responsible
- Educated decisions
- People love our flowers

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Laramie County Library

- LEED Gold Certified building
- 2008 Library Journal Library of the Year
- Named one of America's 10 Great Public Libraries by USA Today
- Always striving for excellence in service to our public

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