



# Implementing Sustainability

## ASHRAE Conference

### May 16, 2007

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*Presented by Dave Logan,  
Director of Ada County Operations*

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# Ada County Overview

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- ✦ 1,060 square miles
- ✦ County seat is Boise
- ✦ 345,000 people in 2005
- ✦ 14% increase since 2000
- ✦ 24% of Idaho's population



# Green Building Resolution 1180

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## *All new construction and retrofit projects:*

- ✦ incorporate sustainable design and energy efficiency into the Owner's Criteria
- ✦ incorporate Building Commissioning into the Owner's Criteria
- ✦ > 10,000 gross ft<sup>2</sup> of occupied space shall meet or exceed LEED certification requirements

# Courthouse and Admin Bldg, LEED-EB Silver Certified



## Green Facts

Ada County Courthouse  
& Administration Building  
Boise, ID

LEED-EB Rating out of 76

**Silver** 37

Sustainable Sites 10/16

Water Efficiency 1/5

Energy & Atmosphere 10/22

Materials & Resources 6/10

Indoor Environmental Quality 8/18

Innovation & Design 2/5

*LEED-EB Certified, March 31, 2005*

# Development Services, LEED-CI Certified



## Green Facts

Ada County Courthouse  
Development Services Dept  
Boise, ID

LEED-CI Rating out of 57

**Certified** 26

Sustainable Sites 6/7

Water Efficiency 0/2

Energy & Atmosphere 6/14

Materials & Resources 4/14

Indoor Environmental Quality 8/15

Innovation & Design 2/5

*LEED Certified, April 2006*

# Barber Park Admin Bldg and Rental Facility, LEED-NC



## Green Facts

Project Title: Ada County Barber Park Phase 2  
 Building Use: Admin/Raft Rental & Maint Facilities  
 Location: 4049 S Eckert Rd, Boise, ID  
 Size: Admin 5,817 SF + Maint 4,105 SF  
 Cost: NA

LEED for New Construction Rating out of 57

**Total Score 27**

Sustainable Sites 4/14

Water Efficiency 1/5

Energy & Atmosphere 6/1

Materials & Resources 3/13

Indoor Environmental Quality 9/15

Innovative Design 4/5

**Certification Level Certified**

Energy Savings 17,000 kWh/yr

Carbon Emissions Avoided 9 tons of CO2/yr

Water Savings 268,000 gallons/yr

Construction Waste Diverted 473 tons - 99.58%

## Project Team Profile

Building Owner Ada County Parks & Waterways

Architect McKibben + Cooper Architects

Engineers Mulder Engineering (electrical)  
 Tikker Engineering (mechanical)

Landscape Design The Land Group

General Contractor EKC Construction

Commissioning Agent Heery International

# Weed, Pest, and Mosquito Abatement, LEED-NC

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# Project Highlights

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Location: 975 E. Pine, Meridian, ID  
Facility: Admin Bldg and High-Bay Garage  
Architect: Lombard Conrad Architects  
GC: K-J Corporation, Inc.  
Cx Agent: Heery International  
Completion: May 2007  
LEED: Registered, Certified-level  
Project Cost: \$2,205,000  
Funding: User fees and property taxes

# EMS Response Station, LEED-NC



# Project Highlights

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Location: 963 E. Pine, Meridian, ID  
Facility: EMT Dorms with Emergency  
Vehicle Garage  
Architect: Lombard Conrad Architects  
GC: K-J Corporation, Inc.  
Cx Agent: Heery International  
Completion: March 2007  
LEED: Registered, Certified-level  
Project Cost: \$2,205,000  
Funding: User fees and property taxes



## LEED-NC Version 2.1 Registered Project Checklist

Ada County Weed, Pest, and Mosquito Abatement Facility

Yes ? No

6			Sustainable Sites	14 Points
Y			Prereq 1 <b>Erosion &amp; Sedimentation Control</b>	Required
		n	Credit 1 <b>Site Selection</b>	1
		n	Credit 2 <b>Development Density</b>	1
		n	Credit 3 <b>Brownfield Redevelopment</b>	1
		n	Credit 4.1 <b>Alternative Transportation</b> , Public Transportation Access	1
1			Credit 4.2 <b>Alternative Transportation</b> , Bicycle Storage & Changing Rooms	1
		n	Credit 4.3 <b>Alternative Transportation</b> , Alternative Fuel Vehicles	1
1			Credit 4.4 <b>Alternative Transportation</b> , Parking Capacity and Carpooling	1
		n	Credit 5.1 <b>Reduced Site Disturbance</b> , Protect or Restore Open Space	1
		n	Credit 5.2 <b>Reduced Site Disturbance</b> , Development Footprint	1
1			Credit 6.1 <b>Stormwater Management</b> , Rate and Quantity	1
1			Credit 6.2 <b>Stormwater Management</b> , Treatment	1
		n	Credit 7.1 <b>Landscape &amp; Exterior Design to Reduce Heat Islands</b> , Non-Roof	1
1			Credit 7.2 <b>Landscape &amp; Exterior Design to Reduce Heat Islands</b> , Roof	1
1			Credit 8 <b>Light Pollution Reduction</b>	1

Yes ? No

3			Water Efficiency	5 Points
		n	Credit 1.1 <b>Water Efficient Landscaping</b> , Reduce by 50%	1
		n	Credit 1.2 <b>Water Efficient Landscaping</b> , No Potable Use or No Irrigation	1
1			Credit 2 <b>Innovative Wastewater Technologies</b>	1
1			Credit 3.1 <b>Water Use Reduction</b> , 20% Reduction	1
1			Credit 3.2 <b>Water Use Reduction</b> , 30% Reduction	1

Yes ? No

6			3	Energy & Atmosphere	17 Points
Y			Prereq 1 <b>Fundamental Building Systems Commissioning</b>	Required	
Y			Prereq 2 <b>Minimum Energy Performance</b>	Required	
Y			Prereq 3 <b>CFC Reduction in HVAC&amp;R Equipment</b>	Required	
4	2		Credit 1 <b>Optimize Energy Performance</b>	1 to 10	
		n	Credit 2.1 <b>Renewable Energy</b> , 5%	1	
		n	Credit 2.2 <b>Renewable Energy</b> , 10%	1	
		n	Credit 2.3 <b>Renewable Energy</b> , 20%	1	
1			Credit 3 <b>Additional Commissioning</b>	1	
1			Credit 4 <b>Ozone Depletion</b>	1	
		n	Credit 5 <b>Measurement &amp; Verification</b>	1	
		1	Credit 6 <b>Green Power</b>	1	

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Yes ? No

1			3	9	Materials & Resources	13 Points
Y			Prereq 1 <b>Storage &amp; Collection of Recyclables</b>	Required		
		n	Credit 1.1 <b>Building Reuse</b> , Maintain 75% of Existing Shell		1	
		n	Credit 1.2 <b>Building Reuse</b> , Maintain 100% of Shell		1	
		n	Credit 1.3 <b>Building Reuse</b> , Maintain 100% Shell & 50% Non-Shell		1	
1			Credit 2.1 <b>Construction Waste Management</b> , Divert 50%		1	
	1		Credit 2.2 <b>Construction Waste Management</b> , Divert 75%		1	
		n	Credit 3.1 <b>Resource Reuse</b> , Specify 5%		1	
		n	Credit 3.2 <b>Resource Reuse</b> , Specify 10%		1	
		n	Credit 4.1 <b>Recycled Content</b> , Specify 5% (post-consumer + ½ post-industrial)		1	
		n	Credit 4.2 <b>Recycled Content</b> , Specify 10% (post-consumer + ½ post-industrial)		1	
	1		Credit 5.1 <b>Local/Regional Materials</b> , 20% Manufactured Locally		1	
		n	Credit 5.2 <b>Local/Regional Materials</b> , of 20% Above, 50% Harvested Locally		1	
	1		Credit 6 <b>Rapidly Renewable Materials</b>		1	
		n	Credit 7 <b>Certified Wood</b>		1	

Yes ? No

9			2	Indoor Environmental Quality	15 Points
Y			Prereq 1 <b>Minimum IAQ Performance</b>	Required	
Y			Prereq 2 <b>Environmental Tobacco Smoke (ETS) Control</b>	Required	
1			Credit 1 <b>Carbon Dioxide (CO<sub>2</sub>) Monitoring</b>		1
		n	Credit 2 <b>Ventilation Effectiveness</b>		1
1			Credit 3.1 <b>Construction IAQ Management Plan</b> , During Construction		1
1			Credit 3.2 <b>Construction IAQ Management Plan</b> , Before Occupancy		1
1			Credit 4.1 <b>Low-Emitting Materials</b> , Adhesives & Sealants		1
1			Credit 4.2 <b>Low-Emitting Materials</b> , Paints		1
		n	Credit 4.3 <b>Low-Emitting Materials</b> , Carpet		1
		n	Credit 4.4 <b>Low-Emitting Materials</b> , Composite Wood & Agrifiber		1
1			Credit 5 <b>Indoor Chemical &amp; Pollutant Source Control</b>		1
1			Credit 6.1 <b>Controllability of Systems</b> , Perimeter		1
	1		Credit 6.2 <b>Controllability of Systems</b> , Non-Perimeter		1
1			Credit 7.1 <b>Thermal Comfort</b> , Comply with ASHRAE 55-1992		1
	1		Credit 7.2 <b>Thermal Comfort</b> , Permanent Monitoring System		1
		n	Credit 8.1 <b>Daylight &amp; Views</b> , Daylight 75% of Spaces		1
1			Credit 8.2 <b>Daylight &amp; Views</b> , Views for 90% of Spaces		1

Yes ? No

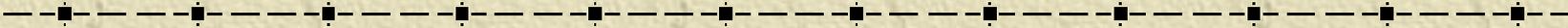
2			1	Innovation & Design Process	5 Points
1			Credit 1.1 <b>Innovation in Design</b> : Education Program		1
	1		Credit 1.2 <b>Innovation in Design</b> : Provide Specific Title		1
			Credit 1.3 <b>Innovation in Design</b> : Provide Specific Title		1
			Credit 1.4 <b>Innovation in Design</b> : Provide Specific Title		1
1			Credit 2 <b>LEED™ Accredited Professional</b>		1

Yes ? No

27			7	Project Totals (pre-certification estimates)	69 Points
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Certified 26-32 points Silver 33-38 points Gold 39-51 points Platinum 52-69 points

# Commissioning



*A powerful tool to help ensure the project is 100% operational at Substantial Completion.*

As a LEED Certified Project, the facility will open with County policies and procedures in place

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- ✦ Indoor Air Quality Plan
- ✦ Interior Building Maintenance Plan
- ✦ Exterior Building Maintenance Plan
- ✦ Chemical Storage Plan
- ✦ Housekeeping Plan
- ✦ Storm water Treatment Plan
- ✦ Recycling Plan
- ✦ Purchasing Plan

# Why does Ada County build high performance, Green Buildings?

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- ✦ We want our projects completed on time, within budget and 100% operational upon completion
- ✦ Control utility costs
- ✦ Increase productivity
- ✦ Protect the environment
- ✦ Sustainable projects are the only way

# Energy Usage

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- ✦ Construction and operation of buildings = 48% of total energy used in the US
- ✦ Need to set goals and objectives to reduce this number in existing buildings
- ✦ 10% can be achieved by tracking utilities and managing energy use
- ✦ Easiest way is to get it in the beginning during design

# Myths

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1. Sustainable, high performance buildings cost more and have a long payback

**TRUTH:** Any extra cost in initial design and construction has a payback of less than 2 years.

# Myths

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2. Most “green” architects, engineers and contractors have experience and expertise in sustainable high performance design and construction.

**TRUTH:** Many green designers and contractors are simply following codes and guidelines.

# Keys to Success

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- ✦ Building owners must demand what they want during design
- ✦ Commissioning agents must verify the owners get what was designed
- ✦ Owners **CANNOT** just specify a sustainable building and expect to receive it
- ✦ Owners **MUST** provide leadership in the **ENTIRE** design and construction process

# Hybrid Vehicles & Alternative Transportation



# Recycling

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# Green Power

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# We're doing our part

By running our facilities more efficiently and investing in energy efficient equipment, **we deliver real results for the environment.**



As a partner with the U.S. Environmental Protection Agency's ENERGY STAR® program, we're committed to protecting the environment through energy efficiency. This year, ENERGY STAR partners and consumers will prevent the greenhouse gas emissions equivalent to 18 million automobiles by using less energy. [www.energystar.gov](http://www.energystar.gov)



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BETTER WITH  
ENERGY STAR**