

# *Using LEED-NC in Colorado*

***Peter D'Antonio, PE, LEED AP**  
**PCD Engineering Services, Inc. - President***

*Consultant under contract to the Governor's Office  
of Energy Management & Conservation*





---

# Rebuild Colorado's mission

---

**BETTER BUILDINGS**  
through energy and water  
efficiency  
improvements

***Free services for state  
and local governments***

# Learning from the leaders Reports from the field

***The efficiency of some schools built in the late 1990's was disappointing.***

***Why?***

***What went wrong?***



# Learning from the leaders

**Colorado  
Springs  
District 11**

**Poudre  
School  
District**



# Learning from the leaders: Need to do things differently....

- ◆ Use integrated design, not “architect down”
- ◆ Use energy modeling from the beginning
- ◆ Use commissioning
- ◆ Use life-cycle rather than first cost for decisions
- ◆ Set energy & water performance targets
- ◆ Model exemplary projects
- ◆ Focus on occupant comfort & productivity

...much like LEED!

# Learning from the leaders... Poudre School District



**Zach Elementary  
Operations Building  
Bacon Elementary  
Fossil Ridge High School  
Kinard Junior High School**





---

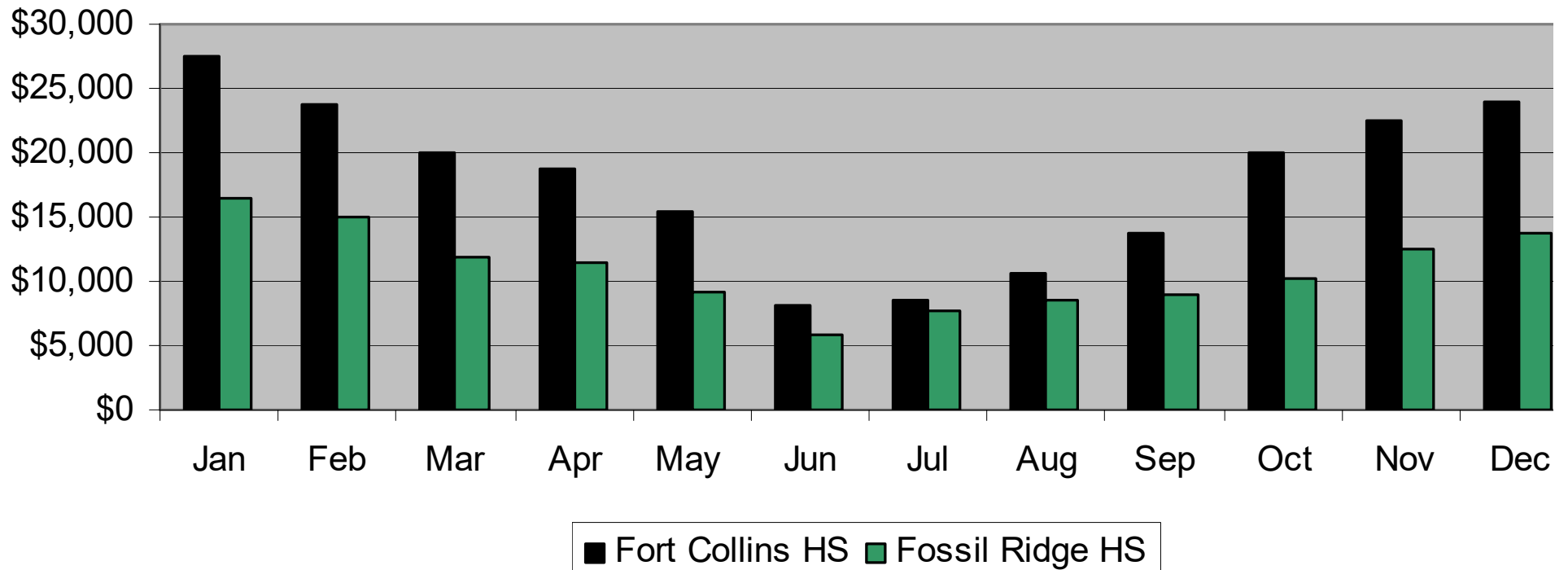
## Learning from the leaders: Results...

---

- ✓ Better learning environments
- ✓ Fewer maintenance hassles
- ✓ Typical construction budget
- ✓ Lower utility bills

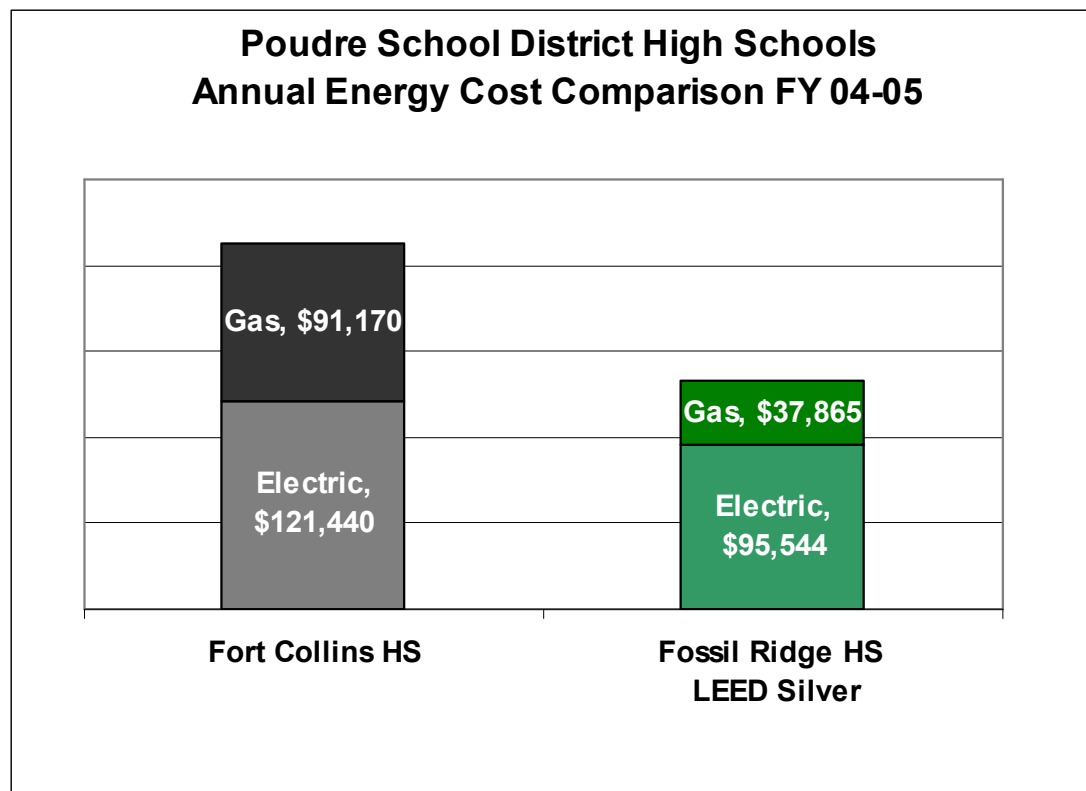
The results are in...

PSD High School Energy Costs FY05





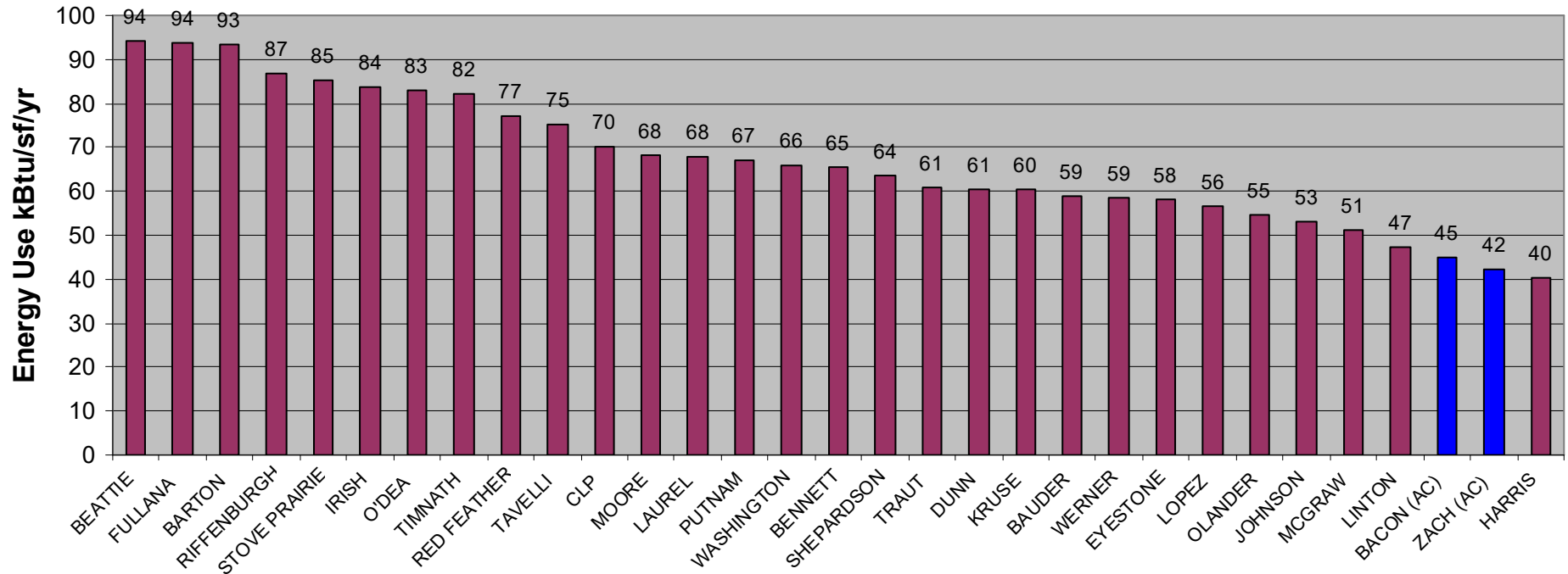
*High performance design saves  
Poudre School District  
\$80,000 per year in one school*



*...that's a lot of bake sales!*

# High performance design delivers ...savings *and* comfort!

Poudre School District Elementary Schools  
FY05 Energy Use



# Colorado Department of Labor & Employment Addition

- ◆ First state-owned LEED certified building in Colorado
- ◆ Built within original program, budget & timeline
- ◆ Owners reps: no prior experience with high performance design
- ◆ Set goal of LEED during short-list process



# Executive Order Greening of State Government



## Executive Order:

*Direct all state agencies and higher education institutions to incorporate high performance design criteria using LEED-NC as a guideline when building new facilities.*

[www.colorado.gov/GreeningGovernment](http://www.colorado.gov/GreeningGovernment)

# Grants and Technical Assistance

## High performance design grants:

- ◆ Over **\$500,000** total to 28 organizations:
  - state agencies, higher education, school districts and others.
- ◆ 2006: Grants will continue for state projects
- ◆ For every \$1 of grant funds, about \$.80 is realized in monetary savings every year.

## Direct technical assistance:

- ◆ Over **\$130,000** for 24 projects including housing authorities, schools and others.



---

# *Grant & Technical Assistance Participants*

## *Better buildings throughout the state...*

---

Academy of Charter Schools  
Alliance for Sustainable Colorado  
Aurora School District  
City of Fort Collins  
Colorado Dept of Labor & Employment  
Colorado Springs Dist. 11  
Colorado State University  
Denver Health  
Denver Housing Authority  
Denver Justice Center  
Denver Public Schools  
Denver Zoo  
Durango Discovery Museum  
Edison School District

Falcon School District  
Hanover School District  
Lakewood Housing  
Mesa State College  
Peyton School District  
Poudre School District  
Roaring Fork Valley SD  
Town of Nederland  
Town of Snowmass  
Univ of Colorado - Colorado Springs  
Univ of Colorado - Boulder  
Weld County Schools #5J  
West End School District  
Western State College

# High Performance Design Services

- ◆ Toolkit for High Performance Design
- ◆ Trainings around the state
- ◆ Supporting Green Building Consortium video
- ◆ State Buildings Support
- ◆ Developing new resources
- ◆ Partnerships: USGBC, EPA, DOE, Tri-State G&T, Ft Collins Utilities, Colorado Springs Utilities, ...



# *Toolkit for High Performance Design*

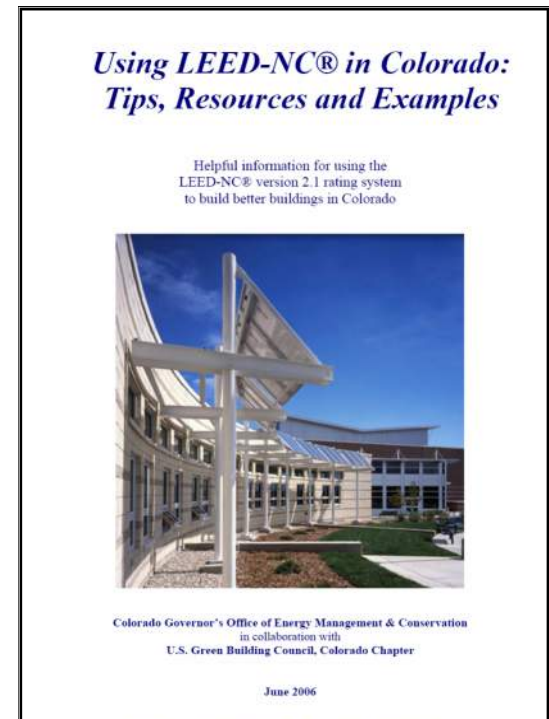


- ◆ Presentations to decision makers
- ◆ Helpful sample documents: RFQ language, guidelines
- ◆ Colorado case studies
- ◆ Training workshops on high performance design and LEED and tours of green buildings
- ◆ Information about LEED in Colorado
- ◆ Telephone consultation for referrals and answers about LEED, commissioning and more
- ◆ High performance design grants (only for state-owned facilities)



# *Using LEED-NC® in Colorado: Tips, Resources and Examples*

- ◆ Helpful information for using LEED-NC version 2.1 in Colorado
- ◆ In collaboration with USGBC chapter
- ◆ Available as a free download  
[www.colorado.gov/rebuildco](http://www.colorado.gov/rebuildco)
- ◆ Released June 2006
- ◆ Version 2.2 update planned



# Developing new resources: *Making the Case*

## **Cost-Effectiveness of LEED-NC Certified Buildings in Colorado**

- ◆ Survey
- ◆ Document actual experiences: costs
  - Additional cost, impact to budget, expertise
- ◆ Document benefits - as available
- ◆ Due: late 2006
- ◆ Advisors: USGBC Colorado Chapter, Building Colorado Coalition, State Building

*How much does LEED cost?*

# Developing new resources: *LEED-EB Policies*

## **Online manual of free sample policies** *(in planning)*

- ◆ Based on experiences with three state projects:  
Department of Personnel & Administration
- ◆ Gathered and presented in context of best practices & LEED EB
- ◆ Supports Greening Government efforts
- ◆ Workshops presenting info to state agencies (May 2006)
- ◆ Available online for all (late 2006)

# LEED-NC Certified Buildings in Colorado

*17 NC certified projects – as of October 2006*

## **Bronze**

- ◆ Aspen Skiing Company, Sundeck Restaurant

## **Certified**

- ◆ CH2M HILL North Building
- ◆ CH2M HILL South Building
- ◆ CH2M HILL West Building
- ◆ Colorado College Tutt Science Center
- ◆ Colorado Department of Labor & Employment Addition
- ◆ Prologis Headquarters

## **Silver**

- ◆ Aspen Skiing Company, Snowmass Golf Clubhouse
- ◆ Boulder Community Foothills Hospital
- ◆ City of Boulder, North Boulder Recreation Center
- ◆ City of Fort Collins, Utilities Green Garage
- ◆ Colorado Springs Utilities Water Laboratory
- ◆ Continuum Partners, Belmar 2M3
- ◆ Opus Northwest Construction, US DOT
- ◆ Pikes Peak Regional Development Center
- ◆ Poudre School District, Fossil Ridge High School

## **Gold**

University of Denver,  
Mary H. Ricketson Law Building

# LEED-NC Certified Buildings in Colorado

## **2000 (qty 1)**

- ◆ Aspen Skiing Company, Sundeck Restaurant

## **2003 (qty 2)**

- ◆ CH2M HILL North Building
- ◆ City of Boulder, North Boulder Recreation Center

## **2004 (qty 4)**

- ◆ Boulder Community Foothills Hospital
- ◆ CH2M HILL South Building
- ◆ CH2M HILL West Building
- ◆ Opus Northwest, US DOT

## **2005 (qty 8)**

- ◆ Aspen Skiing Company, Snowmass Golf Clubhouse
- ◆ Colorado College Tutt Science Center
- ◆ Colorado Springs Utilities Water Laboratory
- ◆ University of Denver Ricketson Law Building
- ◆ Poudre School District, Fossil Ridge High School
- ◆ Colorado Department of Labor & Employment Addition
- ◆ Belmar 2M3, Continuum Partners, LLC
- ◆ Pikes Peak Regional Development Center

## **2006 (qty 2 listed as of Oct)**

- ◆ City of Fort Collins, Utilities Vehicle Storage
- ◆ Prologis Headquarters, Denver



*17 NC certified  
projects – as of  
October 2006*

Governor's Office of Energy  
Management and Conservation



Aspen Skiing Company  
Sundeck Restaurant  
*Aspen, Colorado*



**LEED-NC BRONZE**  
v1 Feb 2000



# LEED-EB Certified Colorado Projects

- ◆ **Amerimar Realty: Denver Place N & S Towers**  
Denver  
LEED-EB Pilot, Gold November 2004
- ◆ **University of Colorado at Boulder: UMC**  
Boulder  
LEED-EB v2.0 Silver June 2006
- ◆ **Alliance for Sustainable Colorado: Alliance Center**  
Lower downtown Denver  
LEED-EB v2.0 Gold June 2006

# LEED-CI Certified Colorado Projects

- ◆ **Pearl Street Mall Properties: Boulder Associates Office**  
Boulder  
LEED-CI v2.0 **Gold** November 2005
- ◆ **Colorado State University: Green Classrooms of Guggenheim**  
Fort Collins  
LEED-CI Pilot **Silver** June 2006
- ◆ **DTJ Design, Inc: Boulder Office**  
Boulder  
LEED-CI v2.0 **Silver** July 2006
- ◆ **IFI Real Estate: Rocky Mountain Institute**  
Boulder  
LEED-CI v2.0 **Platinum** August 2006



# *More Projects Underway...*

## Colorado LEED-NC Registered Projects

### **Version 2.1**

Alfred A. Arraj Courthouse  
Academy of Charter Schools (Westminster)  
Belmar Development Block 1, Continuum Partners, LLC (Lakewood)  
Belmar Development Block 9, Continuum Partners, LLC (Lakewood)  
Boulder County Detox Facility, Boulder County (Boulder)  
Children's Hospital at Fitzsimmons (Aurora)  
City of Fort Collins/Colo State University, Transit Center (Fort Collins)  
City of Fort Collins, Northside Aztlan Community Center (Fort Collins)  
Civil Resources, LLC (Frederick)  
Colorado Army National Guard, Buckley Army Aviation Support (Aurora)  
Colorado College, Cornerstore Arts Center (Colorado Springs)

Colorado Dept of Corrections, Colo State Penitentiary II (Canon City)  
Colorado Springs Utilities, Mesa Development Center (Colorado Springs)  
Confluence Condominium Buildings, East West Partners (Avon)  
David Skaggs Research Center, GSA (Boulder)  
Denver Health - Far Western Addition (Denver Health)  
Durango Discovery Museum (Durango)  
EPA Region 8 Headquarters, Opus Northwest LLC (Denver)  
Larimer County Courthouse Offices (Fort Collins)  
Pioneer School for Expeditionary Learning (Fort Collins)  
Poudre Valley Health, Medical Center of the Rockies (Loveland)  
Summit County MRF and Maintenance Garage (Summit County)

# *More Projects Underway...* Colorado LEED-NC Registered Projects

## **Version 2.1 (continued)**

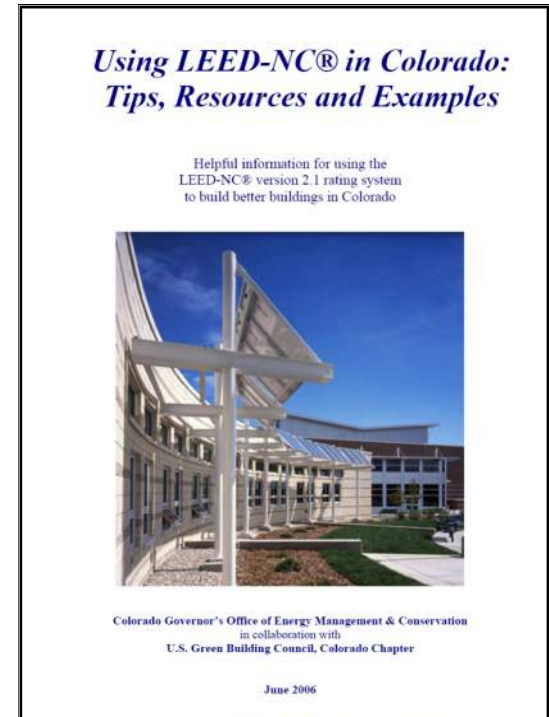
Three Springs Buildings C & D (Durango)  
Thunder River Theatre (Carbondale)  
Traer Creek Plaza, EMDCM (Avon)  
Univ of Colo at Boulder, ATLAS Building  
(Boulder)  
Univ of Colo at Boulder, Leeds Business  
School (Boulder)  
Univ of Colo at Boulder, Wolf Law Building  
(Boulder)  
Univ of Colo at Colo Springs, Science &  
Engineering (Colorado Springs)  
Univ of Colo at Denver Sustainable Youth  
Zone (Commerce City)  
Western State College Foundation, Borick  
Hall (Gunnison)  
Westin Riverfront Timeshare 3 units (Avon)

## **Version 2.2**

Burr Oak Office Building (Fort Collins)  
Chaffee County Head Start (Salida)  
Myananda Residence & Spa  
(Westminster)  
University of Denver, Nagel Residence  
Hall (Denver)  
New Belgium Brewing Company, Bottling  
(Fort Collins)  
Valor Christian Schools (Highlands Ranch)  
Wild Oats Markets, 29<sup>th</sup> St Mall (Boulder)

# *Using LEED-NC® in Colorado: Tips, Resources and Examples*

- ◆ Helpful information for using LEED-NC version 2.1 in Colorado
- ◆ In collaboration with USGBC chapter
- ◆ Available as a free download [www.colorado.gov/rebuildco](http://www.colorado.gov/rebuildco)
- ◆ Due: June 2006
- ◆ Version 2.2 update planned



# Thank you!

*Governor's Office of Energy Management & Conservation*  
*Linda Smith, LEED AP, Sr. Program Manager*  
*[Linda.smith2@state.co.us](mailto:Linda.smith2@state.co.us) (303) 866-2264*

*Consultants under contract to OEMC:*

*Joan Gregerson, LEED AP*  
*[joangregerson@yahoo.com](mailto:joangregerson@yahoo.com) (303) 678-8940*

*Peter D'Antonio, PCD Engineering Services*  
*[peter@pcdengineering.com](mailto:peter@pcdengineering.com) (303) 678-1108*



[www.colorado.gov/rebuildco](http://www.colorado.gov/rebuildco)