

# COLORADO BUILDING GREEN

November/December 2005

The official newsletter of the U.S. Green Building Council - Colorado Chapter

## Project Profile

### University of Denver College of Law / The Frank H. Ricketson Jr. Law Building

by Tom Hootman, RNL Design



In June of 2005, the new building for the University of Denver's College of Law earned the first, and currently the only, LEED-NC Gold rating in the state. The design team, led by H+L Architecture, was able to achieve a high level of green design while navigating a complex mix of owner groups each with their own project goals. This mix of owner groups included the University Architect, the Facilities Management Department and the College of Law.

The College of Law was the user group for the project and brought forward the programmatic requirements for an innovative new law building. They also brought forward the goal to achieve a LEED rated building. This goal was championed by a professor in the College of Law's Environmental Law program. "I got excited about the idea of building the nation's first green law school, and when I shared the idea with Law School Dean Mary Ricketson and DU Chancellor Daniel Ritchie, they were equally excited. By the time we went out into the market to interview architects, the whole



# Project Profile

## University of Denver College of Law / The Frank H. Ricketson Jr. Law Building Continued

### Project Data

Project Name	University of Denver College of Law (The Frank H. Ricketson Jr. Law Building)
Project Type	New Construction - Higher Education classroom / library
Project Location	Denver, Colorado
Construction Completion Date	August 2003
Project Size	210,000 SF
Project Cost	\$63,500,000
Owner	University of Denver
Key Participants	
University Architect:	Mark E. Rodgers, AIA
Architect of Record:	H+L Architecture
In Associate with:	Shepley, Bulfinch, Richardson & Abbott
General Contractor:	Saunders
Design Consultants:	Matrix Design - Civil 5Design - Landscape Architect Bierbach - Structural Cator Ruma & Assoc - Mechanical Gordon, Gumeson & Assoc - Electrical Carl Walker - Parking Consultant Rimrock Group - Information Technology David L Adams - Acoustics & A/V Thomas Ricca Assoc - Food Services Gallun Snow - Interior Design & furniture Advanced Consulting Engineers - Code Consultant



community was behind the concept,” noted George “Rock” Pring, Professor of Environmental Law.

H+L Architecture was hired for the project before LEED was out of its pilot stage. During schematic design LEED 2.0 was introduced and adopted for the project. “LEED was very new to everyone at that time. It brought many new opportunities and challenges to the project,” stated Patrick Johnson of H+L Architecture. These new design opportunities had to be weighed against the University’s design standards and maintenance requirements. There was also the challenge of finding appropriate material and product choices to support LEED. “At the time there were significantly fewer product choices and even fewer proven track records,” added Johnson.

The goal for a LEED building had to be met in conjunction with the goals of the University’s Facilities Management Department. The facilities department was primarily concerned with energy efficiency and maintenance issues. Following LEED worked hand in hand with the facilities department’s energy goals, but it raised many questions concerning maintenance of



# Project Profile

## University of Denver College of Law / The Frank H. Ricketson Jr. Law Building Continued



the building. The design team wanted to enhance the indoor air quality of the building by using low VOC paints and finishes. Ultimately most of the finishes were selected with low VOC content including low emitting furnishings which earned its own innovation credit. A key exception was paint for metal surfaces, which stayed with the facilities department preference for oil based paint based on its proven longevity and durability. This was particularly important at door frames that receive a lot wear.

Other new products were considered and researched by the design team and facilities department. One item that was relatively new at the time and drew a lot of questions from the facilities department was waterless urinals. After the design team and facilities department researched this type of fixture everyone grew comfortable with the technology and the facilities department committed to its unique

### Key Sustainable Features

#### *Sustainable Sites*

- Alternative Transportation: Alternative fuel refueling stations, public transportation access, bicycle storage and changing rooms.
- Urban Redevelopment: Development to urban areas with existing infrastructures.
- Landscape and Exterior Design to Reduce Heat Islands: Non-roof components, Light colored high-albedo materials.
- Light Pollution Reduction: Low reflectance surfaces, low-angle spotlights.

#### *Water Efficiency*

- Water Efficient Landscaping: Reduce usage by 50% (groundwater recycled for landscape irrigation). Indigenous plants used for landscaping.
- Water Use Reduction: Fixtures (including waterless urinals and infrared light faucets) reduce water usage by 39%.

#### *Energy and Atmosphere*

- Optimize Energy Performance: High efficiency building materials reduce energy usage by 40%. "Low-e" window glass installed throughout the building and the use of heavy masonry reduce heating and cooling costs. Occupancy sensors tell indoor lighting systems when to turn off and library light fixtures dim when ample natural light is present. Light harvesting features include four-story central atrium, huge exterior windows, and transom windows on exterior offices to transfer light to interior corridors.
- Additional Commissioning: Engaging an outside commissioning agent early in the design process.
- Green Power: Engaged in a two-year contract to purchase power generated from renewable sources that meet the Center for Resource Solutions (CRS) Green-e productions certification requirements. Green power is derived from solar, wind, geothermal, biomass, or low impact hydro sources.

#### *Materials and Resources*

- Construction Waste Management: Recycled and/or salvaged 50% of construction, demolition, and land clearing waste.
- Recycled Content: 80% of materials are recycled and almost 100% are recyclable. Student lockers are made of compressed straw and recycled materials were used in the roof, carpet and ceilings.

#### *Indoor Environmental Quality*

- Construction IAQ Management Plan: All ducts and permeable materials were protected against contamination during construction and time set aside in construction schedule for off-gassing of building materials.
- Low-Emitting Materials: All adhesives, sealants, paints, coating, carpeting, wood emit low or no volatile organic compounds (VOC's).
- Increase Ventilation Effectiveness: Operable windows in classrooms and offices.

#### *Design Innovations*

- Building Longevity – Multi-century building
- Upgrade University Standards for Exterior Lighting Efficiency
- Educational Program
- Low emitting Furnishings

# Project Profile

## University of Denver College of Law / The Frank H. Ricketson Jr. Law Building Continued

yet simple maintenance requirements. The waterless urinals have now proven to be a success at the law building.

The University of Denver is well known for its high quality and uncompromising design standards that utilize a strict palette of materials. Working with the University Architect and the University's design standards proved to be a process that impacted the way LEED was applied to the law building. One of the core principles of the University's design philosophy is building longevity. Buildings on the campus are designed and constructed to last centuries. This principle is extremely sustainable, yet it is not specific to any LEED credits.

In light of this, the design team decided to maintain the longevity goal

in lieu of pursuing specific credits. One example is the copper roof of the new law building. LEED brought new debate to this material choice. Is copper the most sustainable material choice for a roof? Should the roof be a cool roof and decrease the cooling load of the building while contributing to a reduction in the heat island effect? These were all important arguments and questions.

"The debate formed a healthy method for testing what had become an almost never questioned material choice at the University of Denver," said Patrick Johnson. In the end, the copper roof prevailed. The result is certainly sustainable – with a long life cycle and enduring beauty. The copper roof in addition to other building longevity

decisions did result in the award of a LEED innovation credit.

The healthy debate that LEED brought to the design process did impact the application and evolution of some of the University's design standards. This was amplified by the fact that the ENSAR Group (now RMI/ENSAR) was hired as a sustainability consultant directly by the University Architect, giving ENSAR a greater opportunity to examine and influence the University's standards in terms of sustainability. Mark Rodgers, the University Architect noted, "In many ways, what is most exciting is that the LEED standards will push us to do better, and this is what an academic institution should do." A good example is the University's standard exterior light fixture, which did not meet LEED requirements for light pollution reduction. The standard light fixture design was modified to provide the required lamp shielding while maintaining the appearance of the original fixture. The modified light fixture was installed at the site of the new law school and soon became the new campus standard.

The new law building for the University of Denver is an excellent example of a successful LEED building. It meets a high sustainable standard while maintaining and even improving a client's well established design standards. Not to mention how effectively the building delivers an innovative high quality learning environment for the University's College of Law.



# Chapter News

## A Letter from the Chapter's New Executive Director - Amy Jiron



Hello Colorado Green Building Community and congratulations on your successes! Less than two years ago, the USGBC formally recognized a Colorado Chapter with the mission to advance and promote sustainable planning, design, construction and operation of the built environment through education, improving industry guidelines, policy advocacy, and information and resource sharing . Since then our Chapter has grown to more than 150 members, hosted a Colorado Greening conference, educated countless citizens through 24 monthly evening programs, earned over one hundred thousand dollars in grants and sponsorships, won the bid for Greenbuild 2006(!) and received acorn funding to hire me, your first full-time, salaried staff person. These accomplishments have laid the foundation for a strong, successful and progressive Colorado Green Building community. Be proud!

The future of the Colorado Green Building community lies in our determination and ability to include each and every person, profession, city, association and industry engaged in the real estate process. And, the opportunity to do just that is knocking at our door right now! Of our over 150 members, 77% are students, engineers, architects and product manufacturers, none or very few of our members are developers, governmental organizations, accountants, attorneys, insurance and title companies, financial institutions, utilities, trade associations, realtors and real estate appraisers. Of our 24 monthly programs, 100% have been located in Denver, yet Colorado has 850 LEED Accredited Professionals and 236 national USGBC members representing 20 different industry sectors and 31 different cities. Further, over 300,000 Colorado residents are currently employed in some sector of the building community.

Diversification of our Chapter membership can only lead to success. Let's capitalize on the valuable perspective, creativity and input that the whole building community has to offer. In the next year I propose to double our chapter membership, initiate an outreach campaign that embraces absent industry sectors and burgeoning satellite chapters, champion LEED and educate stakeholders on the benefits of "Green" for one not-so-green building project, increase attendance, general appeal and diversity of monthly programs, and raise enough money to not only sustain our chapter, but open a Colorado Green Building Community Resource Center. I challenge you to undertake these tasks with me!

I look forward to a year of hard work rewarded by many successes! I hope to meet all of you soon. Please contact me at any time with your comments, ideas, questions or if I can be of assistance in any other way.

Cheers!  
Amy

# Chapter News

## Results of the Recent Chapter Membership Survey

Over 50% of the USGBC Colorado membership participated in a membership web survey in August. Thanks to everyone who participated for such a high response rate. The highest respondents were architects, engineers, construction, interior design and manufacturing/product/vendors. We received some very positive feedback regarding overall satisfaction rate of membership with 62% being extremely satisfied or meeting their needs. Only 3% may not renew membership. Also, 89% of the survey participants were aware that Denver is hosting Greenbuild in 2006. The word is out!

### Chapter Meetings

REI is the first choice for the Chapter meeting and program location for 74% of the survey participants. 77% of the participants liked the first Monday of the month for the Chapter meeting and program date. We received 47 terrific future meeting topic suggestions. Some of these included case studies, site tours, tools and LEED topics. We also had many requests to hold meetings and programs in other locations around Colorado. Based on the feedback received, look for more programs tailored to the membership's need. Another significant goal for the coming year is to widen the involvement statewide and provide meeting and programs at locations throughout the state.

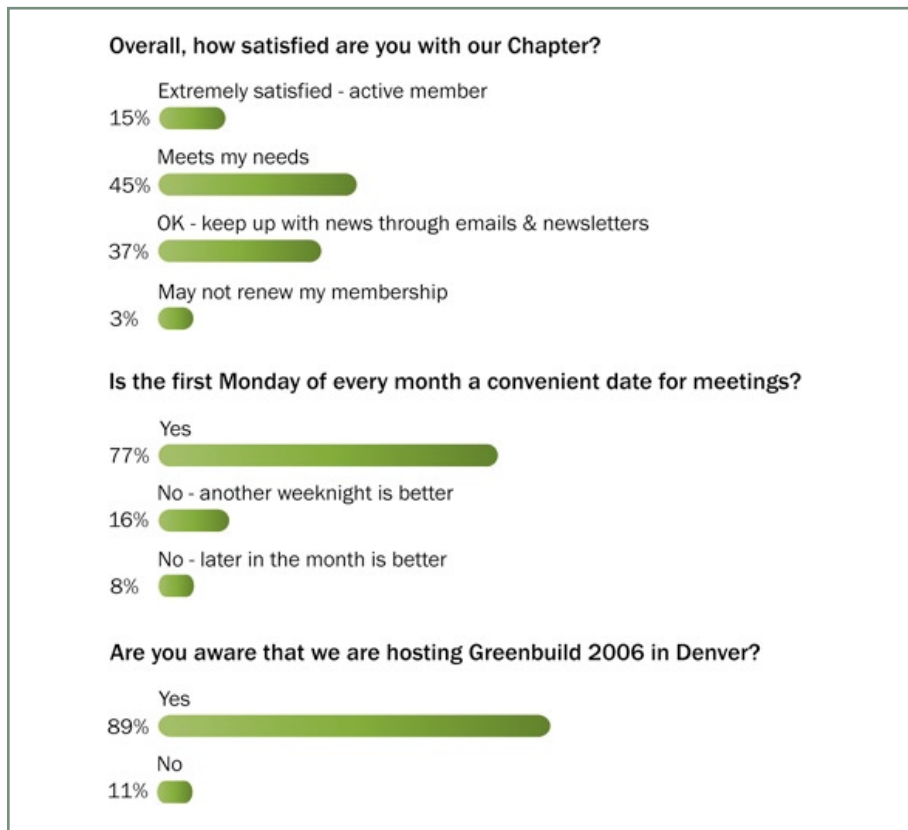
### Newsletter

Survey participants rated project profiles, LEED articles and technical articles as being the most valuable newsletter content. Employment opportunities were rated as the least valuable newsletter content. We had six volunteers to write future articles. We will be contacting these volunteers for contributions to our 2006 editorial calendar. We are also seeking additional volunteers to contribute to two new newsletter sections called "Technical Update" and "The Business Side of Green". The Technical Update section is meant to focus on specific technical issues related to green building, written by local experts in the field. The Business Side of Green is to focus on issues such as marketing, business models and practices and the economics of green building.

### Website

Survey participants rated Chapter meeting and event announcements, calendar of green building events, LEED workshop and study guide information and resources and links as the most valuable content for the Chapter website. Based on this feedback, look for an improved events calendar on the Chapter website in 2006.

The survey resulted in 37 new ideas on how to improve the Chapter and 10 new committee volunteers. We look forward to implementing these ideas and increasing the capacity of our committees with new volunteers. Perhaps the most significant goal for the coming year is in finding ways of reaching out to other areas of state and making our Chapter a truly Colorado Chapter.



# LEED Update



## LEED 2.2 vs. 2.1 – What’s the difference?

by Renée Azerbegi, Ambient Energy, Inc. – Solar and Sustainable Design Solutions

LEED® for New Construction (LEED-NC) v2.2 and associated Reference Guide were officially launched on November 11, 2005 at Greenbuild in Atlanta. It is now possible to register projects under this new rating system. Overall, this rating system is an improvement over the previous LEED-NC versions. It benefits from experience with numerous certified and registered projects, credit interpretation rulings, volunteer LEED committees working diligently to improve each category, and an effort to streamline the LEED process. Still, the changes will increase the cost of securing some credits and will leave some practitioners wondering how the change could possibly be an improvement. This month’s column offers a cursory overview of some of the more conspicuous changes. Please refer to the rating system and Reference Guide for complete details.

### First, the Logistics

Important new resources relating to v2.2 include a new reference guide and a new workshop structured around the new rating system.

The LEED Accreditation Exam will change sometime in mid-2006. So if you plan to take the test before then, study the v2.1 reference guide.

All registered LEED-NC v2.0 and/or v2.1 projects will still be able to apply for certification using the standard in place at the time of project registration.

USGBC has extended the deadline for v2.1 Project Registrations until December 31, 2005. So if you are working on a v2.1 project that you have not registered yet, and you don’t want to use v2.2, you must register your project by Dec. 31, 2005.

Unlike the transition from v2.0 to v2.1, in this revision, projects will not be able to mix different versions of credits within one submittal. If you are currently registered for v2.0 or v2.1, and you determine

that v2.2 would work better for your project, you can switch entirely to v2.2 with no additional registration cost.

The cost structure for LEED has also increased and has a two phase review – one at the end of design and one at the end of construction. The fees for small projects went slightly higher and the fees for projects over 50,000 sf increased much more significantly.

**Table 1. Certification Fees for LEED v2.2** (from USGBC website)

	Less than 50,000 Square Feet	50,000 - 500,000 Square Feet	More than 500,000 Square Feet
<b>LEED-NC &amp; LEED-CI</b>	Fixed Rate	Based on Sq. Ft.	Fixed Rate
<b>Design Review</b>			
Members	\$1,250.00	\$0.025/Square Ft.	\$12,500.00
Non-Members	\$1,500.00	\$0.03/Square Ft.	\$15,000.00
<b>Construction Review</b>			
Members	\$500.00	\$0.01/Square Ft.	\$5,000.00
Non-Members	\$750.00	\$0.015/Square Ft.	\$7,500.00
<b>LEED-NC &amp; LEED-CI</b>	Fixed Rate	Based on Sq. Ft.	Fixed Rate
<b>Combined Design &amp; Construction Review</b>			
Members	\$1,750.00	\$0.035/Square Ft.	\$17,500.00
Non-Members	\$2,250.00	\$0.045/Square Ft.	\$22,500.00
<b>LEED-EB</b>	Fixed Rate	Based on Sq. Ft.	Fixed Rate
<b>Combined Design &amp; Construction Review</b>			
Members	\$1,250.00	\$0.025/Square Ft.	\$12,500.00
Non-Members	\$1,500.00	\$0.030/Square Ft.	\$15,000.00

### So What’s the Difference?

So what are the main differences between v2.1 and v2.2 you may be wondering? Some credits have major revisions, some have minor revisions, and a few have no revisions. The following outlines the major differences between the two rating systems.



# LEED Update

## LEED 2.2 vs. 2.1 – What’s the difference?

Continued

**Table 2. Major Credit Changes from LEED-NC v2.1 to v2.2** (from USGBC website)

<b>SSc5.2-</b> Site Development: Maximize Open Space	Open space definition has been refined to address both urban and suburban settings
<b>SSc6.2-</b> Stormwater Design: Quality Control	Stormwater control systems must be capable of treating 90% of runoff and removing 80% of total suspended solids. System performance information on phosphorous removal is no longer required.
<b>SSc7.2-</b> Heat Island Effect: Roof	New performance metric (Solar Reflectance Index)
<b>SSc8-</b> Light Pollution Reduction	Requirements for control of interior lighting to prevent spillover and restructuring of the exterior lighting requirement
<b>WEc1.2-</b> Water Efficient Landscaping	Use of municipally provided non-potable water is acceptable for credit compliance
The Commissioning Credits ( <b>EAp1</b> and <b>EAc3</b> )	Major clarifications were made to the credit to standardize LEED Commissioning Scope of Work
The Energy Performance Credits ( <b>EAp2</b> and <b>EAc1</b> )	Updated Referenced Standard (ASHRAE 90.1-2004), new energy modeling protocol, two new prescriptive compliance paths
<b>EAc4-</b> Enhanced Refrigerant Management	Credit is now based on refrigerant management methodology established in TSAC refrigerant report
<b>MRC4-</b> Recycled Content	Updated Referenced Standard (ISO 14201)
<b>MRC5.1-</b> Regional Materials	New requirements on what constitutes "regional"
<b>EQp1-</b> Minimum IAQ Performance	Updated Referenced Standard (ASHRAE 62.1-2004)
<b>EQc2-</b> Increased Ventilation	Credit basis has been changed from ventilation effectiveness to provision of higher than code minimum ventilation
<b>EQc3.2-</b> Construction IAQ Management Plan: Before Occupancy	Clarification on building flush-out procedures provided. New IAQ testing protocol has been established. Requirement for installation of MERV 13 filters has been moved to EQc5
<b>EQc4.3-</b> Low-Emitting Materials: Carpet Systems	Updated, Enhanced Referenced Standard (Green Label Plus)
<b>EQc4.4-</b> Low-Emitting Materials: Composite Wood & Agrifiber Products	Revised definition of composite wood. Laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies shall contain no added urea-formaldehyde resins
<b>EQc5-</b> Indoor Chemical & Pollutant Source Control	Provision of properly sized and maintained walk off mats is now acceptable. Mechanically ventilated buildings must have MERV 13 or higher filtration media.
<b>EQc6-</b> Controllability of Systems	Re-structured credit basis: EQc6.1 - lighting, EQc6.2 - thermal control based on ASHRAE 55-2004
<b>EQc7-</b> Thermal Comfort	EQc7.1 and EQc7.2 have an updated Referenced Standard (ASHRAE 55-2004). EQc7.2 now requires a survey method for verification
<b>EQ8.1-</b> Daylight & Views: Daylight 75% of Spaces	Credit can be achieved by three compliance paths: calculation of glazing factor; daylight simulation; or direct measurement of daylighting performance in completed building

There may also be more differences in the new 2.2 Reference Guide. The changes the USGBC website identifies in Table 2 are only some of many changes. Additional changes to the above include the following:

### Sustainable Sites

#### SS Prerequisite 1: Construction Activity Pollution Prevention

References Phase I and Phase II of the National Pollutant Discharge Elimination System (NPDES) program instead of EPA Storm Water Management for Construction Activities, Chapter 3.

#### SSc2 Development Density and Community Connectivity

Added an alternative method to calculation of development density based on proximity to basic services. The changes make it easier to achieve the credit.

#### SSc4.2 Alt Transportation – Bicycle Storage and Changing Rooms

Changing and shower requirements changed to 0.5 full time equivalent (FTE) employees.

#### SSc4.3 Alt Transportation – Low Emitting and Fuel Efficient Vehicles

Changed to reserve parking for low-emitting, fuel-efficient, or alternative fuel vehicles. Low emitting and fuel-efficient are defined as vehicles that are classified as Zero Emission Vehicles or have achieved a green score of 40 or more by ACEEE annual vehicle rating guide (see www.greencar.com)

#### SSc4.4 Alt Transportation – Parking Capacity

Differentiation between type of project and parking provided.

#### SSc5.1 Site Development – Protect or Restore Habitat

Defines native and adapted vegetation.

#### SSc6.1 Stormwater Design – Quantity and Quality Control

Defines more exactly the requirements for stormwater management. Focuses only on reducing total suspended solids (TSS).

#### SSc7.1 Heat Island Effect – Non-Roof

Sets goal of 50% shade and/or light colored paving and/or open grid paving. Defines paving by Solar Reflectance Index (SRI) or 50% parking spaces underground or covered.

#### SSc8 Light Pollution

Changes requirements to include both indoor lighting and outdoor lighting. Exterior lighting is based on type of space (rural, urban, etc.). Interior lighting needs controls when building is unoccupied to turn lights off.

### Water Efficiency

#### WEc2 Innovative Wastewater Technology

Reduced requirement for treating wastewater from 100% to 50%.

### Energy and Atmosphere

#### EAp1 Fundamental Commissioning of the Building Energy Systems

For projects over 50,000 ft<sup>2</sup> the commissioning agent should be independent of the project’s design and construction teams, though they may be employees of the firms providing those services. For projects under 50,000 the commissioning agent can include qualified persons on the design or construction teams who have the required experience.

#### EAc1 Optimize Energy Performance

ASHRAE 90.1-2004 Appendix G methodology is used to define the base case



# LEED Update

## LEED 2.2 vs. 2.1 – What’s the difference?

Continued

and the design case, which is a similar but more complicated than the Energy Cost Budget method used in the 1999 version to document compliance. Percentage of energy savings required reduced since it is a more stringent energy code. For example, the maximum allowable lighting power density for offices is 1.0 compared to 1.3 watts per SF in the 1999 version. The prescriptive method of the ASHRAE Advanced Energy Design Guide for Small Office Buildings can be used to show compliance for office buildings less than 20,000 sf or the Advanced Buildings Benchmark can be utilized to show compliance. Since the prerequisite ASHRAE 90.1-2004 sets a tougher standard, less of a percentage reduction is required in order to score LEED points: 1 point for 10.5% less and a point for each 3.5% beyond that up to 10 points for a 42% reduction. For renovating existing buildings it’s 1 point for 3.5% less and up to 10 points for 35% less than ASHRAE 90.1-2004..

### *EAc2 On-Site Renewable Energy*

Required percentage of annual energy use from on-site renewable energy is reduced. Also, the requirements have been revised to allow solar thermal systems to contribute to this credit. Remember from the last LEED Update article that years 2006 and 2007 are the years to design, install, and purchase solar due to incentives from utilities in Colorado and Federal tax credits! Additional guidance on calculations and definitions is provided in the Reference Guide.

**Table 3. Renewable Energy Requirements**

Credits	Version 2.1	Version 2.2
1	5%	2.5%
2	10%	7.5%
3	20%	12.5%

### *EAc4 Enhanced Refrigerant Management*

The credit provides a complicated formula to balance a refrigerants lifetime ozone depletion potential against the lifetime global warming potential. Allows a credit if no refrigerant is utilized.

### *EAc5 Measurement and Verification*

Only Option B (energy conservation measure isolation) or Option D (calibrated simulation) of the International Measurement and Verification Protocol (IPMVP) can be utilized to determine compliance of one year of post-occupancy data.

### *EAc6 Green Power*

Requirements reduced to 35% of total annual electricity usage, but this does include plug loads.

## Materials and Resources

### *MRc4 Recycled Content*

Credit requirements increased from 5% and 10% to 10% and 20% for one and two credits, respectively. Does not include mechanical and electrical equipment. Furniture may be counted if consistently counted with rest of credits.

### *MRc5 Regional Materials, Extracted, Processed, and Manufactured Regionally*

Simplifies to 10% and 20% for one and two credits, respectively, for products extracted, processed, and manufactured locally.

### *MRc6 Rapidly Renewable Materials*

Reduced requirement from 5% to 2.5% of building material cost.

### *MRc7 Certified Wood*

Removes the requirement for temporary construction applications of wood.

## Indoor Environmental Quality

### *EQc1 Outdoor Air Delivery Monitoring*

Requirement that only densely populated areas need carbon dioxide sensors and the rest need outdoor air measurement devices. Sensor must be in occupied space 3-6 feet from the floor, rather than in the return air duct.

### *EQc2 Increased Ventilation*

Requires 30% more outside air ventilation than ASHRAE 62-2004. Keep in mind that in Colorado’s climate there will be an energy penalty for bringing in more air than necessary. However, studies have found that this will increase indoor air quality, depending on the location of the building (ie. smog). If pursuing this option, heat recovery would be recommended.

### *EQc3.2 Construction IAQ Management Plan: Before Occupancy*

Rather than a 2 week flush out with 100% outside air, LEED v2.2 requires 14,000 cubic feet of flush-out air per square foot of building space. The new credit allows the space to be occupied after 3,500 cf of flush-out, but only if the ventilation is maintained at 0.30 cfm/sf. OR, the credit may be met by monitoring which many may opt for considering the cost of keeping the finished building unoccupied for the 32 days (at 0.3 cfm/sf) it would take to circulate 14,000 cf/sf and the cost of conditioning that quantity of outside air to the required 60 F minimum and 60% relative humidity maximum.

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# Local Green News

## Forest City Stapleton Medical Office Building

by Gregory J. Markling, FCSI, AIA, CCS, CCA, LEED AP, M+O+A Architectural Partnership

## New Medical Office Building in Aurora Going for LEED

Forest City Stapleton, Inc. is the master developer for the redevelopment of the old Stapleton airport property in Denver. In its role of master developer, Forest City is overseeing the development and construction of the infrastructure for residential, open space and retail development. In addition, Forest City is developing several commercial projects on its own accord.

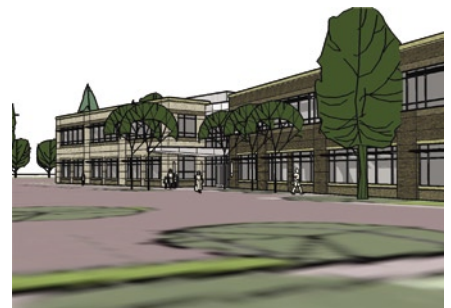
The Stapleton redevelopment area is located in close proximity to the new University of Colorado Health Sciences center at Fitzsimons. Because of its location, Stapleton has become a desirable area for doctor's offices. This factor is the driving consideration behind Forest City's development of its first medical office building.

The new medical office building is located on one of the main entry drives into the Stapleton development and Forest City has requested the building design have a strong street presence and make a statement for the rest of the development. Design guidelines for the overall development must also be followed.

The two story medical office building is being designed by M+O+A Architectural Partnership and the Principal-in-Charge/Project Manager is Gregory J. Markling, FCSI, AIA, CCS, CCA, LEED AP. The building is being designed with flexible floor plates to accommodate large, as well as, small tenants. This factor has attracted its first tenant, a group of doctors associated with UCHSC that

has a requirement to occupy a full floor of the building. In assessing this group's unique program requirements, consideration is being given to designing of an individual entry that would accommodate and give recognition to this particular tenant. A combined entry to enter the individual tenant space as well as the building common lobby is being considered.

Another unique feature of the building is Forest City's desire to have the building LEED (Leadership in Energy and Environmental Design) certified through the USGBC Green Building Rating System as a pilot project in the new LEED-CS (Core and Shell) program. The certification goal is LEED Silver. In the design of the building, renewable materials will be utilized and design elements such as day lighting and energy conservation will be incorporated.



Renderings of the medical office building

# Technical Update

## The Time is Now

by Carol Blaha

### Is it time for you to consider recycling carpet?

Do you remember when recycling was something we thought we “ought” to do, but never considered actually doing? When you replace your carpet, you find a lot of pounds that you are glad to pay someone to haul away. Your supplier will tell you alternatives are not realistic. That is lack of knowledge – not fact.

Granted, you can't just drive it to a local recycling center (yet): It does take planning. Recycling carpet saves about 200 million pounds of waste from being in our landfills. These are not fantasy numbers, but based on only 20 percent of carpet being sent to recycling. Still not impressed? Because carpet is petroleum based, we are saving 700,000 barrels of oil, or 4.4 trillion BTUs of energy – enough to heat more than 100,000 homes each year.

Carpet is a product with a long life-cycle. That, in itself, benefits our environment: The more long-term products vs. quickly disposable items, the better. Almost all carpet in the United States is “green labeled,” a rating system assuring good indoor air quality by the Carpet & Rug Institute ([www.carpet-rug.org](http://www.carpet-rug.org)).

Some manufacturers put a misleading recycling logo on their specifications or on literature. It means the carpet is recyclable, but does not necessarily have any recycled content. Most carpets produced today can be recycled or “down-cycled” to some degree. There is a difference between recycled and down-cycled, though many companies use the term synonymously. That is also misleading, and it is one reason building owners are confused.

Closed-loop recycled products are

made back into fiber vs. a product that will eventually end up in a landfill. Old carpet returned to the company serves as a raw material for new fiber. The closed-loop process can be repeated over and over, assuring that product will never become waste.

On the other hand, products that are down-cycled are reprocessed into another product (such as flowerpots or park benches). The difference is that, at some point, the product is degraded to a degree that it ends in a landfill or is incinerated.

The closed-loop recycling process is so refined that some yarns guarantee the recycled product will never break down to the extent that it cannot be recyclable. Special backings or glues may make a product unable to reprocess. If you want to recycle your carpet at the end of its useful life, you need to make educated choices upfront.

While any manufacturer can find a home for anyone's used carpet, it is easier (and cheaper) to know each manufacturer's policy and send carpet back to where it came from. It will get easier as more carpet is reclaimed and the demand for new products grows. The two major yarn manufacturers have very strong environmental statements, and award certificates to those converting to their products – acknowledging an owner's contribution to sustainability.

We have been talking about recycling carpet for a long time. It's been an ongoing journey, as retailers are still not convinced the building owner cares. We have entered a new era equipped with the knowledge of the clear and true pur-

pose for recycling carpet. It is up to all of us to use this knowledge to make the strategic choices that guarantee further progress toward sustainability.

If you want to recycle your carpet at the end of its useful life, you need to make educated choices upfront.

#### Closing the Loop

A whopping 3 percent of all waste entering a landfill is carpet. The U.S. Environmental Protection Agency (EPA) says that is 4 billion pounds a year! If a typical 2,000-square-foot office facility reclaims 9,000 pounds of carpet waste, that equals 44.4 cubic yards of landfill – saving more than 124.78 million BTUs of energy. In this instance, carpet recycling will also save 11,400 gallons of water.

It should not cost a premium to obtain carpet with recycled content that is recyclable in the closed-loop manner, as discussed. Sending material back to the original fiber manufacturer can cost as little as the freight ride back.

*For information about recycling carpet and the long-life products that carpet can be made into, visit CARE, the Carpet America Recovery Effort, at ([www.carpetrecovery.org](http://www.carpetrecovery.org)).*

*Based in Longmont, CO, Carol Blaha is an independent manufacturer's rep, specializing in floorcoverings, and is a founding board member of the Colorado Chapter of the U.S. Green Building Council. Her website is ([www.carolblaha.com](http://www.carolblaha.com)).*

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# Legislative Update

## Legislative Updates

by Craig Cox

### Xcel Energy's WindSource Program is Saving Money for Consumers

As article by Steve Raabe in the Denver Post of October 12th, entitled "Energy bargain blowing in wind," details how Xcel Energy's wind energy customers will begin saving money on their electricity bills because of the greatly increased cost of natural gas used in generating electricity:

*"Customers of Xcel Energy's Wind-source wind-energy program soon will have more to brag about than their environmental ethic.*

*Namely, lower bills.*

*The 29,000 Colorado Windsource participants who now pay as much as \$6 more a month for "green power" soon will pay up to \$10 less than their neighbors who use conventionally generated electricity.*

*Higher natural-gas prices are driving this abrupt change in the economics of Xcel's voluntary wind-power purchase plan."*

On 25 October, Xcel Energy filed a revised cost adjustment with the Colorado Public Utilities Commission, but observers point out that WindSource customers are still expected to save significantly on their electric power bills this winter due to the stable cost of wind energy.

### Colorado Public Utilities Commission Deliberates on Amendment 37

Since Colorado's voters passed Amendment 37 (renewable energy portfolio standard) in the 2004 general election, Xcel Energy and other parties have been working on implementation activities, through informal workshops at the Colorado Public Utilities Commission (PUC), negotiations and open PUC hearings. On October 7th, the PUC held open deliberations to discuss a final rule on implementing Amendment 37. PUC staff is now working to draft a rule based on the commissioners' deliberations, and the rule is expected to contain a number of provisions, including:

- Adoption of a standard rebate offer for solar electric systems
- Adoption of a new net metering policy
- Interconnection standards
- Approval of provisions where the various parties to the implementation negotiations have reached agreement

The PUC is expected to issue a final rule to implement the provisions of Amendment 37 sometime in November.

### Slippage in Xcel Energy's All-source RFP Timeline

In a September 26th e-mail message to all-source solicitation bidders, Xcel Energy writes:

*"Our target date for making short-list notifications has slipped from the schedule presented in the RFP. In October we hope to notify those bidders who submitted proposals that we will send to the PSCo Transmission group for LGIP (cluster) studies. At the same time, we also hope to notify bidders whose proposals will not be selected. After the LGIP studies are completed, we will analyze the results and notify short-listed bidders with whom we will begin contract discussions. This notification will likely occur in early December."*

### United Power to Seek Exemption from Colorado's RPS

With over 55,000 meters, United Power is one of the three rural electric cooperatives affected by Colorado's Amendment 37 (RPS), which applies only to utilities with 40,000 or more meters. The other two coops subject to Amendment 37 are Intermountain Rural Electric Association, which conducted an opt-out election earlier this year, and Holy Cross Energy, whose management has vowed to exceed the goals of Amendment 37.

United Power recently announced that it will seek to opt out of compliance with Amendment 37, claiming that its members can "save money by choosing not to participate" in this "mandate."

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# Colorado LEED Projects

## Certified Projects

BUILDING	CITY
Sundeck Restaurant (1.0 Bronze)	Aspen
CH2M Hill South Building (V2 Certified)	Englewood
CH2M Hill West Building (V2 Certified)	Englewood
CH2M Hill North Building (V2 Certified)	Englewood
North Boulder Recreation Center (V2 Silver)	Boulder
Boulder Community Hospital (V2 Silver)	Boulder
U.S. Department of Transportation (V2 Silver)	Lakewood
Denver Place (LEED-EB 1.0 Gold)	Denver
Russell T. Tutt Science Center (V2 Certified)	Colorado Springs
Snowmass Golf Clubhouse (V2 Silver)	Aspen
Colorado Springs Utilities Laboratory (V2 Silver)	Colorado Springs
Fossil Ridge High School (V2 Silver)	Fort Collins
University of Denver, College of Law (V2 Gold)	Denver
Belmar 2M3 (V2 Silver)	Lakewood
State of CO Dept. of Labor and Empl. (V2 Cert)	Denver
* Boulder Associates, Inc. (LEED-CI V2 Gold)	Boulder

\* New!



Boulder Associates, Inc. new LEED-CI Gold rated offices in Boulder

# Membership Update

## Welcome New Colorado Chapter Members!

### October and November

Aaron Nelson  
 James M Holland  
 Stacy M Smith  
 Scott Brelsford  
 Stacey Stickler  
 Jeffrey Hall  
 Sergio Preston  
 Cody O'Kelly  
 Alison Lommel  
 Edward VanDeventer  
 Robyn Irons  
 Greg Banks  
 Chih Yuan Ho  
 Janna Six  
 Wayland Walker  
 John Powers  
 Randall Babish  
 Tomas Wolfram  
 Amy Feichtinger

## Welcome New Member Organizations!

### October and November

Bonakemi Usa, Inc.,  
*Aurora*  
 Western State College,  
*Gunnison*  
 Franklin L. Burns School (U of D),  
*Denver*  
 Traer Creek LLC,  
*Avon*  
 Valerian, LLC,  
*Littleton*  
 Drahota, Inc.,  
*Fort Collins*  
 Sink Combs Dethlefs Architects, Pc,  
*Denver*



## VISION

Promote responsibility for Colorado's environmental legacy.

## MISSION

Advance and promote sustainable planning, design, construction and operation of the built environment through education, improving industry guidelines, policy advocacy, and information and resource sharing.

## BOARD OF DIRECTORS

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Colorado Building Green is the official newsletter of the U.S. Green Building Council – Colorado Chapter, and is published monthly. The newsletter is distributed electronically via e-mail. To add or remove your name from the mailing list, or to submit story ideas and other information for publication, please contact the editor at [tom.hootman@rnldesign.com](mailto:tom.hootman@rnldesign.com).

# Get Involved!

## Join a Committee

The USGBC Colorado Chapter needs your help to create high-quality educational programs, events and communications to take the Chapter to the next level. We have established a number of committees that meet monthly to provide direction and input to the Board of Directors and help advance the goals of the Chapter. If you are interested in participating, please contact the appropriate committee chair listed below:

Committee	Chair	E-Mail
Collaboration	Kristi Ennis	kennis@boulderassociates.com
Communications	Tom Hootman	tom.hootman@rnldesign.com
Education	Lauren Yarmuth	lyarmuth@domanisc.com
Events	Elizabeth Vasatka	VasatkaE@ci.boulder.co.us
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Greenbuild 2006	Michael Haughey	mhaughey@earthlink.net
Membership	Janet Pogue	janet_pogue@gensler.com
Programs	Michael Haughey	mhaughey@earthlink.net

Learn more about Chapter committees by following the "committees" link on our Chapter website at [www.usgbc.org/chapters/colorado](http://www.usgbc.org/chapters/colorado). If you have additional questions, feel free to contact any of the committee chairs listed above or the President of the Board, Annette Stelmack, at [annette@associates3.com](mailto:annette@associates3.com).

## Sponsors

Your 100% volunteer staff has been working hard and long to see this goal of a local Colorado USGBC chapter. Your donation helps green building move from innovative idea to factual reality. Much more is needed to meet our goal. Support from our members and sponsors will enable us to expand current programming while developing additional funding (including grant) opportunities.

Thank you to these sponsors for in-kind donations during October and November!



## USGBC Colorado Chapter Sponsors

