

# 2011 SMS REPORT

April 2012



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A photograph of the Casey Middle School Green Roof. The image shows a curved building with a green roof. The roof is covered in low-lying green and reddish-brown plants. Several white, dome-shaped ventilation units are visible on the roof. The building has a modern design with a curved facade and a series of windows. The sky is a clear, bright blue. The text is overlaid on the right side of the image.

**CASEY MIDDLE SCHOOL Green Roof**  
*LEED for Schools Platinum Certification*  
*Colorado Sustainable Design Awards, 2nd Place*

## 01. Foreword

We are happy to publish the first annual report of RB+B's Sustainability Management System. The SMS document was produced in April of 2011 by RB+B's G:REEN Team with input from the entire office. In our first year of implementation, it has been a valuable tool to help us achieve our goals in living out our ideals both in our office as well as in the design of our buildings and their environments.

We understand that what we do as humans affects the quality of all life on our planet. We believe we must think globally and act where we can have the most impact. It is a natural extension of our beliefs and practice to implement the RB+B SMS and participate in the AIA 2030 Commitment.

Our SMS annual report has helped us to document our vision and chart a course for action around each of the three areas of our business: Internal Operations, Internal Process + Technology, and External Product Offerings. We have identified things we are already doing well, as well as areas we will target for growth. With this report, we have provided a benchmark both for ourselves and for our industry to measure growth against. As we move forward, the SMS annual report will help us to tell our story, hold ourselves accountable, and celebrate positively impacting the world around us. We firmly believe that sustainable design, as we practice it, will positively affect ourselves and the lives of the people who use our buildings.

There is yet a lot of work to be done and we have set some difficult targets. The SMS and this report are important guides to keep us on track to reach them. However, achieving these targets is not the end of the process. It is only the beginning as we seek to further understand and broaden our role in the world of education and sustainability.

Ken Field AIA LEED AP  
President

George Brelig AIA, REFP  
Vice President

David Kress AIA LEED AP  
Treasurer

Corky Bradley AIA LEED AP  
Secretary



**ODELL BREWING CO.**

*Fort Collins Urban Design Award for Green Design  
1st Place, Colorado Sustainable Design Awards*



## 02. Introduction

### ***About RB+B Architects***

A member of the Colorado community for over 57 years, RB+B has designed many public buildings and award winning schools. With a focus on the integrated design process, we strive for sustainability in every building project. RB+B works closely with clients to implement sustainable building practices. We are involved with several LEED projects in Colorado and are committed to the future of sustainable building as a registered member of The AIA 2030 Commitment.

In addition to sustainability in our design products, RB+B is committed to long-term change throughout our business organization. A member of the Climate Wise Program since 2007, we have worked closely with the City of Fort Collins and The Institute for the Built Environment at CSU on various sustainability projects within our office. Our goal is to not only reduce waste and make our business greener but also educate and challenge our staff to live and work in a sustainable way. The development of the Sustainability Management System (SMS) has helped to move us toward these goals as well as tracking our progress.

Within the SMS, RB+B had adopted the One Planet Living Framework. This framework is a global initiative developed by BioRegional® which outlines a vision of a sustainable world. As a commitment to this vision we have implemented their

One Planet Action Plan. This plan will help us to embed sustainability in our organization's culture and mission.

### **Mission Statement**

*"RB+B incorporates sustainable design practices in every project no matter what size or budget, designing buildings that are responsive to the natural environment while meeting the user's needs. As we believe in being responsible environmental stewards, we are also committed to incorporating sustainable practices into our daily operations."*

### ***One Planet Living Framework***

One Planet Living is a vision of a sustainable world where people lead healthy, happy lives within their fair share of the Earth's resources. We are demonstrating our commitment to this vision by implementing this One Planet Action Plan. Our plan has helped us to embed sustainability in our organization's culture and mission.





# ONE PLANET ACTION PLAN

We're using a One Planet Action Plan to help us live within a fair share of the earth's resources

<b>Zero carbon</b>	making buildings more energy efficient and delivering all energy with renewable technologies
<b>Zero waste</b>	reducing waste, reusing where possible, and ultimately sending zero waste to landfill
<b>Sustainable transport</b>	encouraging low carbon modes of transport to reduce emissions, reducing the need to travel
<b>Sustainable materials</b>	using sustainable and healthy products, such as those with low embodied energy, sourced locally, made from renewable or waste resources
<b>Local and sustainable food</b>	choosing low impact, local, seasonal and organic diets and reducing food waste
<b>Sustainable water</b>	using water more efficiently in buildings and in the products we buy; tackling local flooding and water course pollution
<b>Land use and wildlife</b>	protecting and restoring existing biodiversity and natural habitats through appropriate land use and integration into the built environment
<b>Culture and heritage</b>	reviving local identity and wisdom; supporting and participating in the arts
<b>Equity and local economy</b>	creating bioregional economies that support fair employment, inclusive communities and international fair trade
<b>Health and happiness</b>	encouraging active, sociable, meaningful lives to promote good health and well being

## 03. Our Top Priorities

### *Priority Principles*

After the firmwide workshop and development of our SMS, we identified five principles where we believe we can have the greatest impact. In order of priority, those Principles are:

1. Zero Carbon
2. Health and Happiness
3. Zero Waste
4. Sustainable Materials
5. Culture and Heritage

### *Cross-Cutting Intentions*

In organizing our thoughts into the One Planet Living Framework, several intentions emerged that we desire to incorporate into our sustainability initiatives:

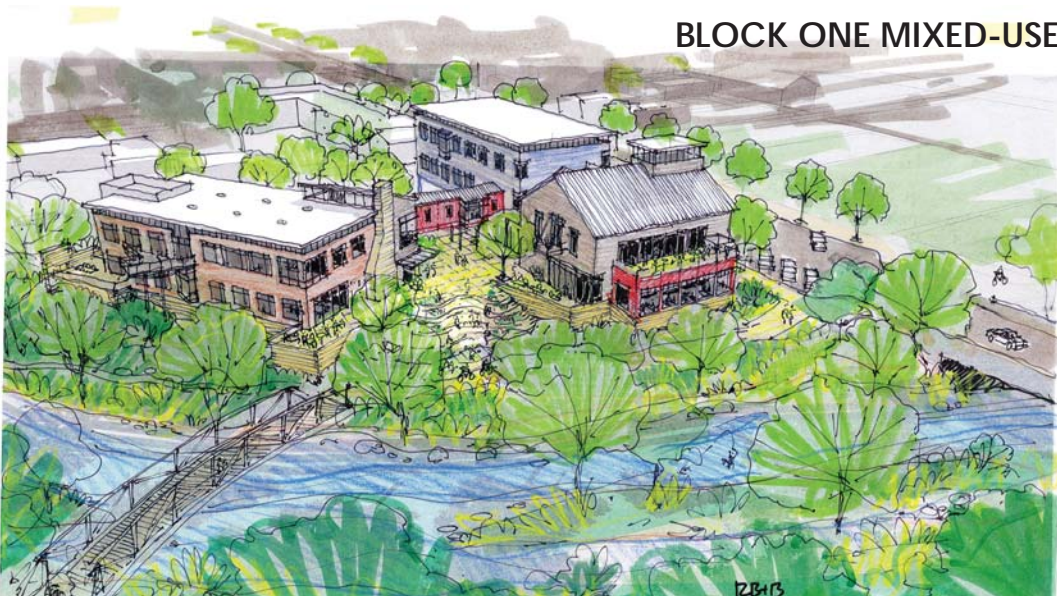
1. Communication. We desire to continually improve our communication, whether internally within RB+B or among

RB+B and our clients, consultants, and the general public.

2. Education. RB+B designs educational facilities and believes in the power of education. We desire to educate ourselves, our clients, our consultants, and the general public.
3. Building Instruction Manual. In the spirit of communication and education, we desire to capture the design intent that emerges from the RB+B design process for our clients so that they can educate the people that occupy and operate their buildings. This RB+B document may incorporate many of the Principles. It is to be distributed to the client as a part of our normal full architectural service on our major projects.
4. Consultant Contracts. We desire to work with consultants who also want to design within the

resources of our planet. Many of the Principles will be incorporated into our consultant selection process and contracts.

### BLOCK ONE MIXED-USE







RED HAWK ELEMENTARY SCHOOL  
LEED for Schools Gold Certification





## 04. 2011 Accomplishments

2011 was the start of a great year for implementing our SMS. We were able to accomplish at least one project in each of our five "Priority Principles" and had the opportunity to focus our energy on our cross-cutting intentions.

The following pages provide a detailed look into the projects that we completed in 2011 along with detailed cost and savings information for each project. The information is divided into the multiple principles that were affected as well as the AIA 2030 Commitment and City of Fort Collins Climate Wise program.

**Larimer County Environmental Stewardship Award** | RB + B Architects was recognized for our newly implemented Sustainability Management System. The Sustainability Management System focuses effort inward, and is a roadmap for the firm to achieve corporate sustainability. We were given this award for having demonstrated a positive example by linking business practices with internal culture for maintaining environmental stewardship.

### Continuing Education

City of Fort Collins Commercial Building Code Green Building Amendments | Derek Young attended seven courses focusing on the building envelope requirements of the new code. Courses included Building Air Tightness, The Value of Air Barriers, Air Barrier Materials & Assemblies, Design of the Air Barrier System, QA/QC of the Air Barrier, City of Fort Collins Air Barrier Testing Protocol, and Air Barrier Case Studies presented by Pie Forensic Consultants.

2030 Challenge | In 2011, Matt Arabasz attended a series of courses offered by the AIA and intended to provide details about the Architecture 2030 Challenge. He presented what he learned to the office

### Rocky Mountain Green Conference

| Derek Young of RB+B, Drew Russ of Adolfson & Peterson and Steve Loppnow of YRG Sustainability Consultants presented "Contractors and LEED, Adding New Value and Driving Change: Opportunities and Next Steps for Contractors in the LEED Certification Process".



ARNG READINESS CENTER





## Zero Carbon

### Lights Out Lunch

In July, Lacey Reckelhoff started our monthly "Lights Out Lunch" program. On the third Tuesday of each month we turn out the lights during lunch to help remind everyone to turn out the lights when not in use. The program has made for some fun lunch-time meetings and often the lights stay off for the rest of the afternoon.

*Project Cost: 1 hour*

*Project Savings: Possible 85 kWh/mo = \$10 in 2011*



### Energy Consumption

2011 saw a 19% reduction in electrical energy use from 2010 and a 52% reduction from our 2008 baseline. In 2011, we increased our natural gas consumption by 14% over 2010. However, natural gas consumption was down by 10% from

our 2008 baseline. Our overall energy consumption (kBtu/sf/yr) was 28% better in 2011 than in 2008 and 2% better than in 2010. We continued our practice of purchasing "Green Energy" through the City of Fort Collins to offset our electrical usage.

*Project Cost: \$390.88*

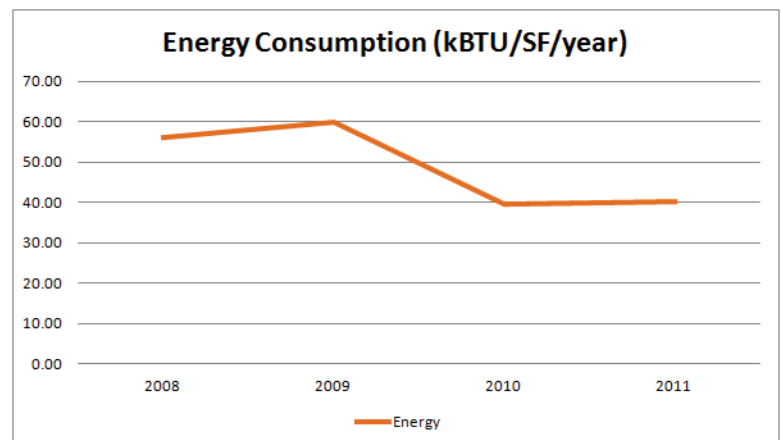
*Project Savings: \$354.69 (from 2010)*

### Night/Weekend Energy Use

Charles Fielder gathered information on office energy use such as servers, copy machines and printers, the coffee machine, and general lighting. Suggestions were provided for ways to reduce/eliminate power used at night and on the weekends with goals to implement in the coming years.

*Project Cost: 4 hours*

*Project Savings: \$310/yr possible savings*





## Zero Waste

### Divert to Dirt

In June of 2008 we began our "Divert to Dirt" project to reduce landfill waste by composting food waste. We had originally used green cones in employees' backyards, but they quickly became overloaded with the amount of food waste we produced. In January 2010, we began a commercial composting program



with *Clean Air Compost* which increased the amount and variety of items that could be composted.

In 2011, we reduced our landfill waste by almost 700 pounds over our 2008 baseline. However, we increased it by 100 pounds over our 2010 numbers. This may be due to cleaning out

storage areas and other projects that produced non-compostable and non-recyclable items.

*Project Cost: \$552.21*

*Project Savings: \$0*

#### Teams:

- Pious Paddlers
- Royal Recyclers
- Orange
- Cave Crickets

#### Areas for Collection:

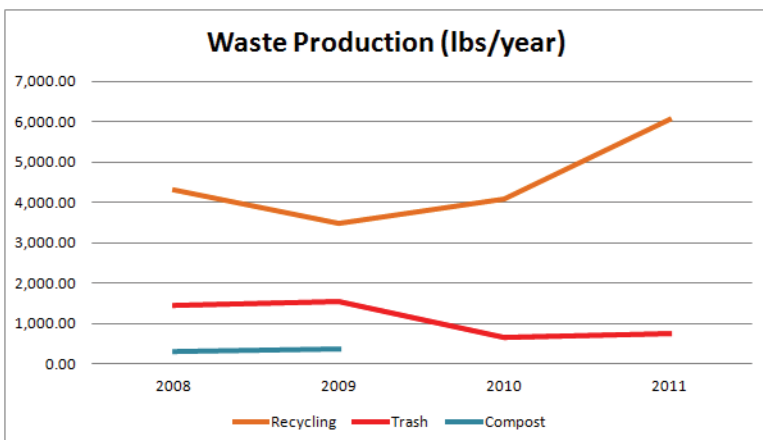
- Upstairs Hallway
- Copier Room
- Interiors
- Under Stairs
- Personal Bins

### Recycling Teams

In 2010, we began our recycling team project to get everyone involved in recycling. This program serves not only to educate people about what goes into the recycling, but also distributes the work of emptying the recycling and compost bins every week. In 2011, we recycled over 6,000 pounds of material, a 2,000 pound increase over 2010.

*Project Cost: 1 hour/week*

*Project Savings: \$0*







## Sustainable Transportation

In 2011, we saved 765 gallons of gasoline by using alternative transportation for commuting and business.

*Project Cost: 3 hours tracking*

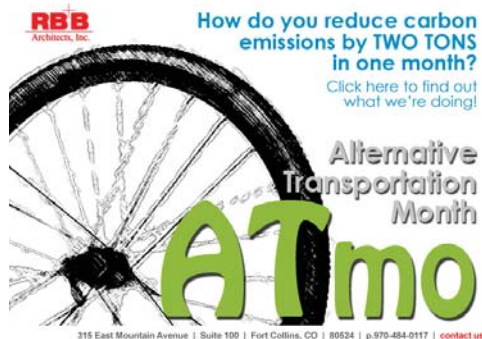
*Project Savings: \$5,912 (business miles that didn't have to be paid)*

### ROAD Challenge

In 2010, we began our ROAD (Reduce Our Automobile Dependency) Challenge to encourage employees to use alternative transportation when commuting. 2011 saw 100% participation from employees, with each person using alternative transportation at least once during the year.

*Project Cost: 3 hours*

*Project Savings: \$0*



### ATmo (Alternative Transportation Month)

In 2011, we declared June Alternative Transportation Month to correspond with the City of Fort Collins Bike to Work Week and the kick-off of summer.

We reduced our carbon emissions by

just over two tons! (2,054 lbs). Every person in the office used alternative transportation AT LEAST one time in the month and many rode bikes, walked, and carpooled to work.

*Project Cost: \$50 + 2 hours*

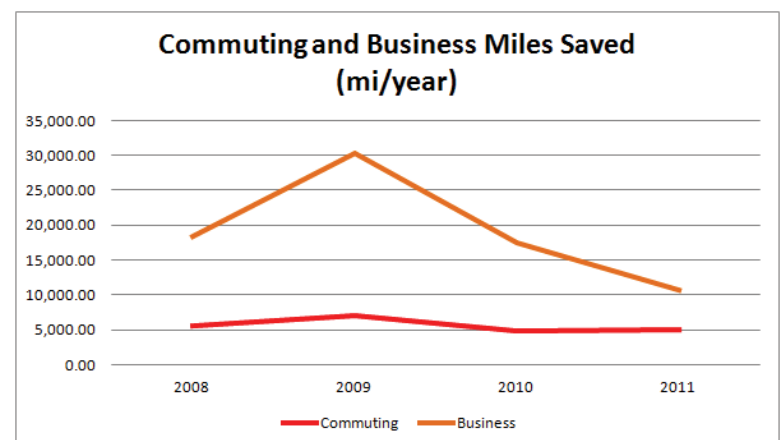
*Project Savings: \$0*

### Office Bike Kit

Rebecca Spears gathered all the items necessary for a simple bike kit at the office. The kit includes a pump, patch kits, and a lock.

*Project Cost: \$52 +1 hour*

*Project Savings: \$0*





## Sustainable Materials

### Green Cleaning

We replaced the use of harsh cleaning supplies with green cleaning products. These products include:

- Biodegradable general purpose cleaner, dishwasher detergent, and dish soap
- Biodegradable hand soap
- 100% recycled content facial tissue, toilet tissue, and paper towels

*Project Cost: \$100/year*

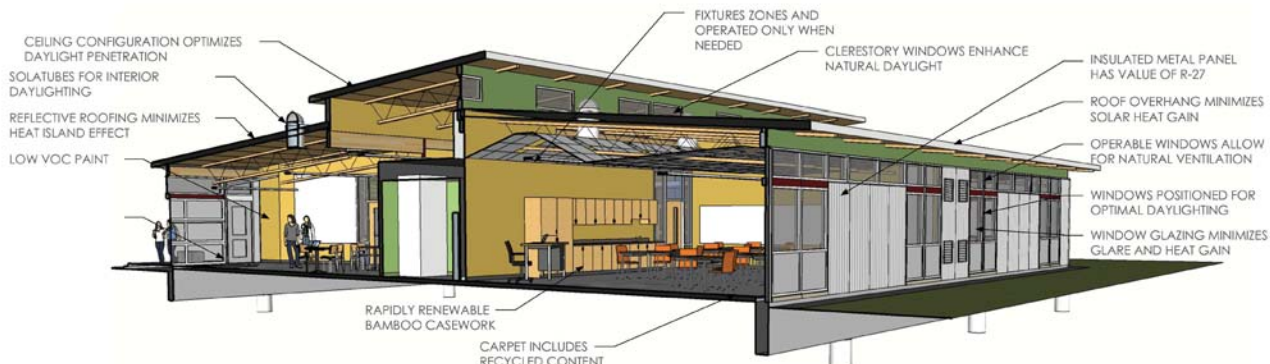
*Project Savings: \$0*

### Re-use Forum

David Kress created an Excel spreadsheet that employees can access to borrow/share commonly used tools and other equipment. This makes it possible to access these resources free of charge to employees rather than each person buying their own table saw (for example).

*Project Cost: \$0*

*Project Savings: \$0*







## Sustainable Water

### Sustainable Water Systems Presentation

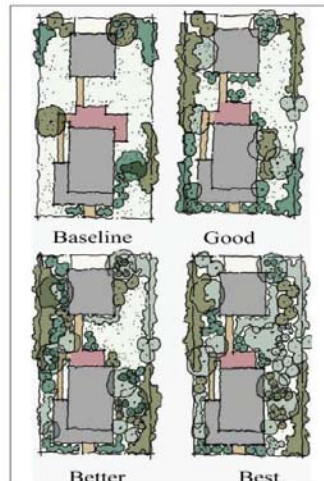
In July, Jason Bird of AECOM presented their Sustainable Systems Integrated Model (SSIM) Water Module to our office during lunch. While our office has traditionally used energy models to predict and streamline energy use in a building, this model does the same for water usage inside and outside of the building. This could include irrigation demand estimating and cistern sizing, building specific water use auditing and evaluation, and full water balance for master-planned communities and commercial projects. As our office strives to attain high levels of sustainability on our projects, stay ahead of our competition in available services, and achieve the goals of

the AIA 2030 Challenge, protecting our precious water resources is a key element to our success.

*Project Cost: \$0*

*Project Savings: \$0*

### Sustainable Systems Integrated Model (SSIM) Water Module





## Culture & Heritage

### Art Installation

One of our SMS goals is to have five clients install history or local art installations. The Rialto Theater Center installed Art in Public Places per City of Loveland requirements for City funded projects. The APP budget was equal to 2% of the overall project cost, or roughly \$45,000. The City contracted with Denver artist David Griggs to conceptualize the art installation pieces. David developed the pieces around the theme “up in lights” relating to the Rialto Theater’s

stage productions. The “up in lights” theme inspired the railings for the main stair, the relief light rays at the main stair walls, and the oval LED light pads over these stairs. David also designed a terrazzo floor using a stencil of the “Rialto” neon marquee sign. In addition to David Grigg’s art pieces RB+B integrated the “Rialto” neon marquee sign in the design displaying it prominently on the entry corridor masonry wall, and used a large window at the second floor gathering room to frame a view to the sign.







## Health and Happiness

### Foliage for the Future

In celebration of Earth Day, RB+B participated in greening the office – with plants! Employees were asked to bring in their favorite plant, a cutting from a plant, plants that are ready to split and repot, plants that love offices and need a new home, pots/planters they weren't using at home, and gardening gloves/tools. Rebecca Spears donated the potting soil. The office had a meeting in the courtyard to repot the plants. We successfully planted 20 new plants for the office.

*Project Cost: \$0*

*Project Savings: \$0*



## AIA 2030 Commitment

"In December of 2005, the AIA adopted a Sustainable Architectural Practice Position Statement that set the profession on a trajectory toward carbon neutrality. It called for a 50 percent reduction from the current level of fossil fuel consumption used to construct and operate new and renovated buildings by the year 2010 and further reductions of remaining fossil fuel consumption by 10 percent or more in each of the following five years with the ultimate goal of zero fossil fuel consumption by the year 2030.

The AIA 2030 Commitment program is the AIA's cornerstone effort to demonstrate the progress AIA members are making toward reducing the operational energy use of their designs, while encouraging other architects to do the same. The program is a voluntary call for action for member firms to join and demonstrate progress toward the industry's widely adopted 2030

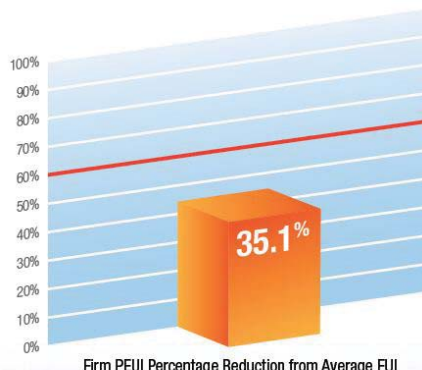
targets in both how the firms operate and how they design. To date, more than 170 firms have made the commitment, ranging in size from the sole practitioner to the multi-national practice." *AIA 2030 Commitment First Annual Report, May 2011*

RB+B signed on to the AIA 2030 Commitment program in January of 2010 and submitted our first report in March of 2012.

For projects in design in 2011, RB+B reported 550,021 gross square feet of whole building/ addition projects. Our Predicted Energy Use Intensity (PEUI) Reduction from the National and Regional Site Energy Use Intensity (EUI) was 36.8% in 2011. The project with the highest PEUI percent reduction from average, 75.9%, was the Windsor Readiness Center. The graphic below shows that we are only slightly above the firms that reported for 2010 in terms of overall reduction.

### Firm PEUI % Reduction from Average EUI

This metric offers a snapshot of the firm's average reduction, weighted by Gross Square Foot (GSF), from the national average. Combined, the firms reporting saw an average 35% PEUI reduction from the national average EUI.



Firm PEUI Percentage Reduction from Average EUI

**70.6%**

LARGEST PEUI REDUCTION  
REPORTED BY A FIRM

**11.6%**

SMALLEST PEUI REDUCTION  
REPORTED BY A FIRM

*AIA 2030 Commitment First Annual Report, May 2011*

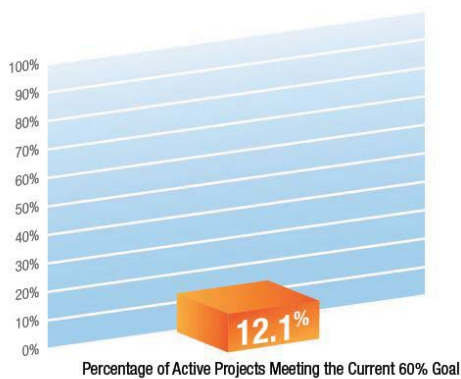


According to the AIA 2030 Commitment First Annual Report, 12.1% of active projects meet the current goal of 60% energy intensity

reduction target. Only 5.6% of our gross square feet reported for 2011 meets this target.

#### Percentage of Active Projects Meeting the Current 60% Goal

This metric offers a snapshot of the percentage of a firm's design portfolio, weighted by Gross Square Foot (GSF), which is currently meeting the 60% energy reduction target. Roughly 12% of the combined firms design portfolio (based on PEUI) is meeting the current goal of a 60% reduction from the national average.



69.8%

LARGEST % GSF OF ACTIVE PROJECTS MEETING GOAL REPORTED BY A FIRM

0%

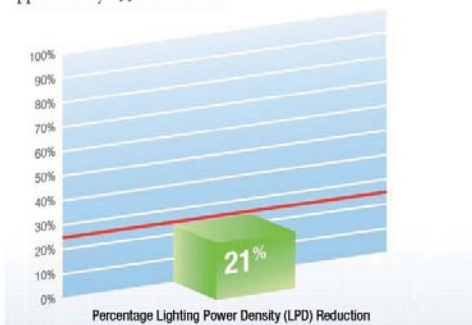
SMALLEST % GSF OF ACTIVE PROJECTS MEETING GOAL REPORTED BY A FIRM  
*Reported by multiple firms*

AIA 2030 Commitment First Annual Report, May 2011

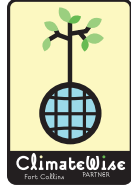
For 2011, RB+B reported 127,749 gross square feet of interior only projects. Our Lighting Power Density (LPD) Reduction from ASHRAE was 20.7%. The project with the highest LPD percent reduction, 27.2%, was the Fairmont School in Denver. The graphic shows that we are above average and meeting the 25% reduction target for lighting power density of interior only projects.

#### Lighting Power Density (LPD) Reduction

For various reasons, not all firms reported LPD data for their portfolio. Of the 56 firms reporting, 41 included LPD data representing approximately 255 million GSF.



AIA 2030 Commitment First Annual Report, May 2011



## City of Fort Collins Climate Wise Program

RB+B joined Climate Wise in 2007 and worked our way up the ranks to be recognized as a Platinum Partner in 2011 at the annual EnvirOvation event.



One of the benefits of becoming a Platinum partner is that we get to be featured in advertorial campaigns such as the banner to the right. We were also featured in Northern Colorado Business Magazine as a Platinum partner.



In October, Rebecca and Jayne presented at the Business Innovation Fair.

**Join Climate Wise.  
It's easy. It's fun.**

### City of Fort Collins Climate Wise Program.



- Free customized recommendations for waste, water, energy and transportation savings
- Tools to start or enhance environmental programs
- Employee education and engagement
- Public recognition
- On-going support
- Peer-to-peer networking

### Climate Wise benefits your business.

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- Join forward-thinking business leaders



A Top 50 Innovative Government Program by Harvard University.

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## 05. Sustainability Vision and Goals

In developing our SMS, we divided our organization into three areas: Internal Operations, Internal Process + Technology, and External Product Offerings. To date, our SMS has largely been focused on tracking and reporting efforts in the Internal Operations area, demonstrating that we “practice what we preach.” This has also been driven by our commitment to the Climate Wise program.

Moving forward into 2012, we envision shifting our focus to establishing new initiatives in the Internal Process + Technology area (while maintaining current initiatives in the Internal Operations area). While we are proud to “practice what we preach,” we know that there is even greater potential to positively impact the environment through our design work for our clients.

In signing the AIA's 2030 Commitment, we have agreed to track and report progress in this area. New initiatives in 2012 will be

focused on improved tracking and reporting of project data as well as more deliberate communication with all of our clients regarding the environmental impacts of their projects and the opportunities to reduce those impacts.

We envision bringing more rigor to our Internal Process + Technology area will be an opportunity to more broadly engage our staff in our sustainability efforts, which is an additional goal for 2012. Implementing formal sustainability initiatives into the firm's workflow will increase buy-in from our staff and build momentum for sustainability initiatives moving forward.

We are proud of the work we have done incorporating sustainable materials and strategies into our design work over the last decade and look forward to improving tracking and reporting methodologies to better document our progress and further refine our approaches.

## Appendix A - Active and Completed Tasks

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### Active Tasks

Tasks.[Task #]	Task Title	Assigned To	Due Date	Status	Cost (\$)	Savings (-/0/+)	Estimated Hour
	Client Letter	Ken Field	2/14/2012	In Progress	0	0	6
IO.ZC.03	Rewiring	David Kress	2/14/2012	In Progress	\$700	-	3
IO.ZW.06	Zero Waste Days	Josh McGarvey	1/24/2012	In Progress	0	0	3
IO.HH.18	Indoor Air Quality	Denise Pozvek	2/14/2012	In Progress	Research	0	2
IO.ZC.19	Building Envelope	Derek Young	2/14/2012	In Progress	Research	+	2
IO.ST.03	Monthly Carpool Day	Matt Arabasz	2/14/2012	Not Started	Research	0	2
IO.LSF.02	Fairtrade/Local Food for Break	Jayne Kafka	2/14/2012	In Progress	+	-	2
IPT.HH.02	Design Input Opportunities	Rebecca Spears	2/14/2012	In Progress	Research	0	4
IPT.ZC.27	Quantifiable Goals	Corky Bradley	2/14/2012	In Progress	0	0	16
IO.CH.01.1	Volunteer Event	Gopal Shrestha	2/14/2012	In Progress	0	0	4
	Sustainability Forum	Randy Shortridge	2/14/2012	In Progress	Research	-	16
IPT.ZC.29	Research Methods for 2030	Matt Arabasz	2/14/2012	Not Started	Research	Research	80
IO.CH.01	Volunteering Standards	Charles Fielder	2/14/2012	In Progress	0	0	8
IO.ZC.05	Virtualized Server Technology	Jason Kersley	9/1/2012	In Progress	Research	-	4
IO.ZW.10	Eliminate Use of Foam Core	Jayne Kafka	2/14/2012	In Progress			
IO.ZC.01	Replace lighting	David Kress	2/14/2012	In Progress	Research	-	Ongoing
IO.ZC.04	Track and Report Energy Use	Jayne Kafka	3/1/2012	In Progress	0	0	2
IO.CH.05	Local Volunteering Opportunities	Charles Fielder	2/14/2012	Not Started			
IO.CH.03	Volunteering with Kids	Charles Fielder	2/14/2012	Not Started			
Total							19



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## Completed Tasks

Task Title	Assigned To	Priority	Start Date	Due Date	Completed Date
Upgrade collection bins	Stacey Kersley	(1) High - 1 month	7/5/2011	8/9/2011	8/9/2011
Water Goals for Sites	Brianne Smith	(2) Normal - 3 mont	7/20/2011	8/9/2011	7/28/2011
LEED EB	Brianne Smith	(2) Normal - 3 mont	7/5/2011	8/9/2011	7/26/2011
Reuse Forum for Personal Items	David Kress	(1) High - 1 month	7/5/2011	7/12/2011	7/14/2011
Lights Out Lunch	Lacey Reckelhoff	(1) High - 1 month	7/5/2011	7/12/2011	7/8/2011
Bike Kit	Rebecca Spears	(1) High - 1 month	7/5/2011	7/12/2011	7/5/2011
Office Activities	Jayne Kafka	(1) High - 1 month	6/1/2011	6/1/2011	6/30/2011
Computer Shut-Down	Arlo Schumann	Ongoing	6/30/2011	12/31/2011	6/30/2011
Blank		(2) Normal	7/5/2011		
Nighttime Energy Use	Charles Fielder	(2) Normal - 3 mont	7/5/2011	8/9/2011	
Total					10