Institute for the Built Environment

YEAR IN REVIEW
2013

Institute for the Built Environment
Colorado State University
College of Health and Human Sciences

www.ibe.colostate.edu
OUR MISSION

to foster stewardship and sustainability of the built and natural environments through interdisciplinary educational forums.

OUR VISION

to be a premier forum for integrating research & practice toward environmentally, socially & economically regenerative places. This vision is accomplished by engaging diverse partners to elevate the conversation and equip leaders in order to shift the marketplace.

INFLUENCING & LEARNING FROM OUR CITY, STATE, & NATION

Our student interns, staff, and collaborating faculty work on increasingly diverse projects which provide opportunities to influence, and learn from, projects within our city and campus, around Colorado, and across the U.S. As you review our concise annual report, note the mix of scales and increased diversity of research, outreach education, and service learning projects.

IBE interns from CSU Horticulture and Landscape Architecture led The GaRden effort.

Nationally, research work at IBE is beginning to impact school districts, government buildings, student housing, and potentially, the architectural design process as part of CSU’s Carbon Footprint Metrics NSF-funded research team. We completed a telling green schools research study for DLR Group and are putting the finishing touches on an important investigation for the High Performance Buildings office at the U.S. General Services Administration (GSA), the first phase of an initiative to help federal building operators better manage their green facilities.

Locally, we have been part of nine projects in 2012-13. Notably, many campus and community members are enjoying the newly renovated Lory Theatre. We helped the Aller-Lingle architectural team achieve LEED Gold certification. Also, thanks to the UniverCity Connections forum, IBE is helping to launch a new city initiative, the Urban Lab, which brings together students, professionals, community members, faculty, and City officials to envision and create beneficial places for the UniverCity district, especially the Mason Corridor and downtown Fort Collins.

At the state level you’ll see five projects, most notably the Army National Guard Readiness Center. Our staff and interns helped the RB+B design team reach LEED Platinum. The Readiness Center in Windsor has received many awards including a Top 10 2013 U.S. projects by Interior & Sources magazine. The GaRden at Coors Field is a very small project that received great publicity. ARAMARK asked IBE to design and manage a sustainable garden which produced many vegetables for selected ballpark restaurants.

We look to continue to impact our nearby communities as well as our nation while training our graduate interns for impactful professional careers. In this annual report you will see a new membership program that we are launching to allow our supporters to provide funding and donations designed to enhance our institute’s focus areas and our graduate interns’ research opportunities.

As always, thanks for your ongoing support – consider ‘joining’ IBE and helping us impact our city, our state, and our nation!

Sincerely,

Brian Dunbar, Executive Director
Changing market dynamics, especially related to LEED projects and education, provided some financial challenges for IBE in Fiscal Year 2013. Our team worked hard to adapt and adjust and we are feeling positive about the outlook for Fiscal Year 2014.

Because IBE is a soft (self) funded entity within CSU, it is essential that we have a stable and diverse income from across our service offerings, research, trainings and donations. During Fiscal Year 2013, IBE continued to diversify our income stream by offering a broader spectrum of sustainability and green building consulting services and increasing our research income and donations from prior years.

Off-Campus Services remain our largest source of income. Our service learning project work income represents the applied learning opportunities that provide CSU students with meaningful professional experience. Salaried staff continues to be our most significant expense, as they are essential to providing both student mentorship and quality assurance to our clients and research funders.

*Note: IBE’s Fiscal Year is July 1, 2012 - June 30, 2013*
IBE brings together faculty, students and staff from across the university who share a passion for sustainability and the built environment. Our interdisciplinary approach provides a unique opportunity to cross pollinate between disciplines and departments.

Our program offers experiential education and practical knowledge for students who aspire to be leading professionals in the green building industry. Students are supported and mentored by senior staff, providing professional work products for our clients.

Many of our interns arrive with little experience in design, construction and/or sustainable building. Through our service work, students become well-equipped sustainability professionals and project managers. During their tenure at IBE students hone their professional skills in client communication, task management, decision-making, budget management, and sustainability in the built environment. The professional work experience gained at IBE becomes an invaluable portion of students’ graduate education and helps them secure meaningful employment in their desired fields of work.

Students listed from top, left to right

2013 STUDENTS
» Colin Day, M.S. Landscape Architecture
» Scott Preston, M.S. Landscape Architecture
» Anderson Lewis, M.S. Construction Management
» Allison Smith, M.S. Construction Management
» Samala Hartley, M.S. Interior Design
» Erin Nuckols, M.A. History
» Brody Hatch, Ph.D. Economics
» Sarah Kittell, B.S. Business
» Angelina Howard, B.S. Business

2013 ALUMNI & POSITIONS
Elliot Dale, M.S. Construction Management Administrative Project Manager, ICAST
Becky Moriarty, M.S. Construction Management Assistant FC Bikes Coordinator, City of Fort Collins
Aaron Wagner, M.S. Landscape Architecture Landscape Architect, Waterwise Land & Waterscapes
We conduct research to transform practice, not to sit on a shelf. We desire to produce actionable results that enhance products, services, and organizations. Research is a part of our core mission; it informs and is informed by our services and our outreach education.

Through our experience on various exciting research projects this past year, we continue to expand our expertise in research-based best practices critical to today’s market. This year, we focused on the following topics:

**Strategies for Sustainable, Cost-Effective Operations & Maintenance**

Through a federal grant from the U.S. General Services Administration, we summarized effective strategies and low- to no-cost opportunities for sustainable operations utilizing research from academia, national laboratories, and professional associations in five high impact areas: plug and process loads, water efficiency, daylighting, behavior, and operational efficiency.

**Key Principles for School Sustainability: Whole School Sustainability Framework**

Through a grant from the USGBC Center for Green Schools, we are publishing a public report of the Whole-School Sustainability principles.

**Integrative Design Process**

Through an in-depth evaluation of our process, we have defined the key steps and strategies for success and are currently writing a guidance document to assist communities and project teams implement this process.

As an interdisciplinary institute, this past year’s exciting cross-campus collaborations include:

- Jennifer E. Cross, Associate Professor of Sociology, is now our Director of Research and through her leadership, we are expanding our focus on the human experience in the built environment.
- Professors and graduate students across campus are collaborating to develop the Carbon Footprint Metric, funded by the National Science Foundation.
- We established the Urban Lab, an idea engine for a vibrant Fort Collins, in collaboration with UniverCity and the CSU Landscape Architecture Program.

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Completed Projects

- Hyper-Localization of Sustainable Architecture, Project Research | eVolo Publishing
- Linking Performance & Experience | DLR Group Green Schools Research Project
- Waste Audit & Behavior Program | Rocky Mountain National Park, CO

Ongoing Projects

- Carbon Footprint Metric | NSF
- Knowledge Network Development | U.S. General Services Administration
- LENSES Application Guide Development
- Mason UniverCity District Urban Lab | Fort Collins, CO
- Whole-School Sustainability Report | USGBC Center for Green Schools

Selected Publications

- “Green School Building Success: Innovation through a flat team approach” Constructing Green, Book | Jeni Cross
- “Incorporating Biophilic Design through Living Walls” Constructing Green, Book | Brian Dunbar, Lenora Bohren
- “Linking Performance & Experience: An Analysis of Green Schools” DLR Group, Report | Stephanie Barr, Jeni Cross & Brian Dunbar

» Complete Publications List
EDUCATION

Providing cutting-edge educational offerings and training programs to industry professionals is a key activity of our institute, fulfilling the mission of a land-grant university to disseminate new knowledge to the public. We pride ourselves in delivering current, relevant, and engaging content that utilizes case studies, the first-hand experience of our project managers and partners, and the results of current research.

In 2012-2013, we shared our knowledge, research, and project experiences with communities and industry professionals across the U.S. and in Costa Rica. At our 2012 planning retreat, we made a strategic decision to focus and align our educational outreach with our 5 research focus areas, emphasizing our expertise in learning environments, living environments, healthy built environments, integrative design processes, and organizational sustainability.

Stephanie Barr and Brian Dunbar shared IBE research at the Diseno Sostenible International Congress in San Jose, Costa Rica. Josie Plaut and Jeni Cross were selected to present TEDx talks to audiences in Colorado. April Brown shared our LEED for Existing Buildings research and project work to Higher Education Facility Managers in our 9-state region. Lenora Bohren and Brian both facilitated LENSES integrative design workshops; Lenora engaged a national anthropology audience and Brian worked with groups in Austin, TX.

Our staff and interns instituted a blog writing program to enhance communication of our research and service-learning work. Our blog serves several goals; it provides a platform for our interns to share what they are learning, updates to our stakeholders, and an educational medium for those interested in topics within green building and sustainable built environments.

Completed Projects
- Custom Sustainability Training | Johns Manville Sales Force
- Custom Charrette Facilitation Training | AEC
- Educational Signage | Larimer County Alternative Sentencing Building

Ongoing Projects
- Integrated Sustainability Manager Certificate Program Development | IBE

Selected Invited Talks
- “Whole-School Sustainability” Diseno Sostenible, San Jose Costa Rica | Stephanie Barr, Invited Keynote
- “Sustainability: For a Healthy Future” Plain Green Conference | Brian Dunbar, Invited Keynote
- “Our Path to an Infinite Future” TEDxFront Range | Josie Plaut
- “Inter-Agency Networks: Creating Organizational Transformation for Sustainability” American Sociological Association | Jeni Cross
- “Three Myths of Behavior Change” TEDxCSU | Jeni Cross
- Complete Presentations List

Blog Growth
by Monthly Page Views

33 PRESENTATIONS
9 STATES
2 COUNTRIES
SERVICE LEARNING

We integrate research and practice in order to provide a valuable platform for learning and dissemination of information for students and professionals alike. Through our work in facilitation, green building certification, and organizational sustainability, we bring diverse stakeholders and perspectives together. We engage our teams to discover innovative solutions, push the envelope toward higher levels of achievement, and to re-evaluate how buildings and organizations operate using triple bottom line thinking. Our driving philosophy is that diverse stakeholder input is critical to a successful project.

We offer services in 4 key areas: integrated design and green building certification, green building performance and certification, community engagement and facilitation, and organizational sustainability. While we continue to be involved in local, regional, and national new construction projects, we are seeing greater demand for green building performance services, such as LEED for Existing Buildings, organizational sustainability, building portfolio management and corporate social responsibility.

The past year’s projects have expanded our knowledge on the following themes:

Exceeding Expectations - Pushing toward higher levels of efficiency
More often than not, our consulting services enable projects to achieve a higher level of LEED certification than anticipated. This is due to our robust integrative design approach, our ability to find innovative solutions, and through our detailed understanding of the LEED rating systems.

Integrative Process
Integrative design process resulting in the best possible building per the program. The Alternative Sentencing Division project that was completed this year is an exceptional example of how integrative process leads to exceptional results.

Influence of Third Party Certification
Third party certification continues to transform the market. Looking ahead to LEEDv4, a rise in net zero buildings certifications, and the Living Building Challenge, third party certification is an evolving and dynamic opportunity to continue advancing the green building industry.

2013 Project Achievements

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<tr>
<td>Platinum</td>
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</tbody>
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Ongoing Projects
- Avenir Museum | Colorado State University
- Brinton Museum | Sheridan, WY
- Campus Crest Corporate Sustainability
- Campus Crest Conservation & Behavior Program
- Campus Crest HQ | Charlotte, NC
- Civic Center Master Plan Charrette | Fort Collins
- Curt Gowdy Visitor Center | Laramie County, WY
- Engineering II | Colorado State University
- evo Graduate Student Life Center | Philadelphia, PA
- The GaRden at Coors Field | Denver, CO
- Hampton Inn & Suites | Gunbarrel, CO
- Health Pro Medical Facility | San Juan, Puerto Rico
- Lory Student Center Revitalization | Colorado State University
- Summit Hall EB:O&M | Colorado State University
- Utility Services Building Renovation | Fort Collins

Completed Projects
- Animal Sciences | Colorado State University
- Army National Guard Readiness Center | Windsor
- Berry Center | University of Wyoming
- Larimer Cnty Alternative Sentencing | Fort Collins
- LSC Theater Remodel | Colorado State University
- Red Hawk Elementary | St. Vrain, CO
- Red Tail Ponds Community Workshop | Fort Collins
- Visual Arts Facility | University of Wyoming
FOCAL AREAS

Living Environments
Living environments are places that generate, restore and/or regenerate health and wellbeing in natural, social and economic systems.

We continue to develop the LENSES Framework, our tool to guide the design of living environments. This year, we made great progress refining the framework and developing the LENSES Application Guide. A grant from SoGES is allowing us to apply the LENSES Framework on the Urban Lab project, focusing on biodiversity in urban redevelopment zones.

Learning Environments
We are committed to driving the integration of sustainability into school design, operations, curriculum and culture where students may develop the skills to lead a sustainable future.

Our Whole-school Sustainability Framework continues to guide our work in learning environments. This framework integrates the built environment with organizational culture and educational programs in order to develop holistic, sustainable schools. In collaboration with the USGBC Center for Green Schools, we are preparing a report to be published in the winter of 2013. The Center intends to use our framework as a model for assisting schools in achieving the Green Ribbon Schools Award.

Organizational Sustainability
In order to develop and operate regenerative projects, organizational change is often required, shifting focus to triple bottom line decision-making.

IBE is expanding and growing our focus on integrated sustainability management. Jeni Cross is contributing her expertise in behavior change and social networks to provide a scientific and unique perspective to our organizational sustainability offerings. Our partnership with Campus Crest Communities continues to be an important learning and development opportunity for IBE.

Healthy Built Environments
Improving the health of natural and social systems is essential to the development of regenerative solutions.

In collaboration with the Environmental Health, Sociology, and Economics departments at CSU, we have submitted a 1 million dollar grant to the EPA to study the effects of the built environment on student and teacher health and performance in the Poudre and St. Vrain School Districts.

Integrative Design
Sustainable, regenerative design and development requires a holistic, team approach to truly create vital, successful places.

Through our ongoing partnerships with project teams and community groups we have developed and refined a unique and robust facilitation process. We are drafting a white paper to disseminate our process and methodology on integrated design in 2014.
2014 INITIATIVES

Each year we reflect on our work and industry trends in order to identify the critical needs in the marketplace and the strategic initiatives which would best meet these needs.

Integrated Sustainability Manager Certificate Program
Recent trends in green building and organizational sustainability have resulted in professionals taking on new leadership positions within organizations, focused on leading sustainability initiatives. However, most often these leaders are faced with challenges they were never prepared to maneuver. To address a growing need for a comprehensive integrated sustainability management education, IBE is developing a new certificate program that will launch in the Spring of 2014. The certificate will consist of four badges including building operations, facilities, occupant engagement and organizational management.

www.ibe.colostate.edu/learn.aspx

Membership & Donor Program
To continue to grow and enhance our student mentorship program, our research activities, and remain a leader in sustainability education and practice, we will launch a membership and donor program in December of 2013. This program will exist to facilitate communication and collaboration with the design, development and building industries to inform and expand the educational and research mission of the Institute for the Built Environment.

www.ibe.colostate.edu/support.aspx

Dissemination & Partnerships
Based on IBE’s nearly 20 years of service, research and education, we plan to launch a research library based with short white papers. Topics for the library include integrated design, building operations, and trends and opportunities in multi-family housing. Fundraising efforts and in the works to develop an eBook focused on Whole School Sustainability.

Much of IBE’s strength and unique contribution to CSU and the broader community is due to creating a forum for unique and diverse collaborations. In 2013-2014 we are expanding our partnerships with a focus on healthy built environments and in energy topics.
LEADERSHIP

External Board Members
Greg Fisher | Greg Fisher Architecture
Bruce Hendee | Chief Sustainability Officer, City of Fort Collins
Sue McFaddin | Sustainability Entrepreneur
Bill Franzen | Owner, SAGE2 Associates
Angela Loder | Health in Buildings Roundtable, NIH
John Fitch | President, Sustaining Tomorrow Today Institute
Steve Steinbicker | Principal, Architecture West

Advisory Board

Campus Board Members
Carol Dollard | CSU Facilities Management
Carl Hammerdorfer | Director, Global Social Sustainable Enterprise
Jane Choi | Assistant Professor, Landscape Architecture
Katharine Leigh | Professor, Interior Design
Stephen Reynolds | Professor, Environmental & Radiological Health
William Timpson | Professor, School of Education

Donors
We would like to express our warm thanks to the individuals and organizations who have supported the institute, our mission, and our students.

Campus Crest Communities | Davis & Davis Architects | Andrew Michler | John Mlade | Brian + Karen Dunbar