



Colorado  
State  
University

*Knowledge to Go Places*

*Ram Built:  
Leaders in  
Construction*

Fall 2005

Department of  
Construction  
Management

College of  
Applied Human  
Sciences

## Department of Construction Management

# Ram Built

## Leaders in Construction

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This spring, when 60 students received their construction management degrees, we presented each graduate with a Colorado State CM “Ram Built” hardhat with their name and year of graduation on front. We’re extremely proud of these students. They’ve invested so much of themselves in their education and have proved themselves in internships, class and research projects, and regional and national competitions. As graduates of what is widely recognized as one of the country’s leading CM programs, Colorado State construction management alumni have what it takes to become leaders themselves.

Becoming leaders in construction results from numerous factors. These include the quality of education students receive, the faculty and mentors who encourage and inspire them, the support staff who advise and help keep them on track, the companies that hire them, the success and ongoing involvement of our alumni, and more.

Our faculty have led our program to its leadership status by serving as role models and mentors. They stimulate students to learn, ask questions, test new ideas, and branch out into the community. They create innovative courses in which students learn to grasp CM fundamentals and apply that knowledge in simulated and actual settings. They participate in professional organizations, such as the Associated General Contractors, Mechanical Contractors Association, Associated Builders and Contractors, and the National Association of Home Builders, modeling to students the values of participating, contributing, and lifelong learning.

By serving in leadership roles in many professional organizations, our faculty also help direct the future of construction education. Next fall, we will introduce our new, revitalized curriculum, which is designed to enhance students’ education with critical communication, pre-construction, and integration skills. In their final capstone course, for example, students will develop a management plan for taking a project from conception to completion. One of the most important facets of that plan is how they will manage relationships



*Dr. Larry Grosse, Department Head*

and communications among all parties contributing to the project.

We also have the industry to thank for helping to grow our program to one of national excellence. Each year, more than 200 industry representatives come to campus to recruit our students for desirable positions. Companies actively approach us with ideas, contributions, and research projects. This year, for example, faculty and students are participating in a research project funded by Genesis Homes to develop virtual homebuilding plans, with the goals of reducing the potential for errors and increasing production efficiencies.

Next spring, our department will celebrate its 60th anniversary, culminating at our black-tie-and-jeans Ram Built Gala. Presently, we are recording the department’s historic milestones. We are also trying to identify those graduates who have gone on to become leaders (CEOs, COOs, Presidents, Directors, or Owners) of construction organizations. But we need your help. Please call or send me an e-mail ([drfire107@mindspring.com](mailto:drfire107@mindspring.com)) or use the “We Love Hearing From You” form on page 15 to let us know who you are and the leadership role you are in or have been in. If you know of other Colorado State Construction Management alumni in leadership roles, please let us know who they are.

Identifying our alumni leaders in construction will allow us to recognize you in the Halls of Guggenheim and will help inspire others to reach their highest potential.



## LEEDing to the New Transit Center

The new Fort Collins Transit Center, planned for the north side of the Lory Student Center, will help teach people about sustainable construction practices. The transit center is one of several regional projects involving the CM department's Institute for the Built Environment (IBE) as a Leadership in Energy and Environmental Design (LEED) consultant.

The 15,000-square-foot transit center will house Transfort bus offices, meeting spaces, a lobby/waiting area, and the Lory Student Center convenience store.

Last spring, CM, interior design, and engineering students in Brian Dunbar's Sustainable Technologies in the Built Environment class explored signage and interpretive options for ways to make the transit center project a learning experience for other students during and after construction. The first signs will be installed when demolition of the facade on the north side of the Student Center begins this fall.

"When the building is complete, permanent signage will tell visitors about the sustainable features of the building and about the importance of ecologically sensitive design, construction, and occupancy," says Josie Plaut, a CM graduate student and IBE representative.

Plaut is helping to coordinate the project's LEED certification goals by attending project meetings, learning and interpreting the LEED Rating System, and managing the documentation process.

"It's largely to Josie's credit that the transit center is almost certain to be LEED-certified," says Mary Nobe, an IBE research associate and doctoral candidate. "She has clarified the issues regarding the various credit ratings and whether or not they're achievable. Because of her knowledge of the LEED system, she's initiated good discussions that have really helped this project."

## Competing to Win

Colorado State's CM student teams again led the way at regional and national competitions in 2005.

"Our students are being heavily recruited at these competitions, because our industry leaders want to be associated with winners," says CM Department Head Larry Grosse. Take Joel Yates, captain of last year's MCAA student team (which took first place), for example. After graduating in May 2004, Yates was hired by Kinetics, one of the event's sponsors.

Another way companies are investing in our students is by stepping forward to sponsor our student teams. During 2005, 29 individuals and companies donated toward team expenses (see sidebar). After the 2005 NAHB competition, Mercedes Homes Inc. offered to sponsor CSU's entire NAHB team next year by paying for students' travel expenses to participate in the competition.

We send our heartfelt thanks to all those companies that have donated to help our student teams. Congratulations to our winning teams, pictured below.



Winning teams of (left) the ASC Region IV Competition – 1<sup>st</sup> Place (Commercial) and the ASC/AGC National Competition – 2<sup>nd</sup> Place (Commercial); (center) the MCAA National Competition – 2<sup>nd</sup> Place (Mechanical); and (right) the NAHB National Competition – 3<sup>rd</sup> Place (Homebuilding).

## 2005 Student Competition Sponsors

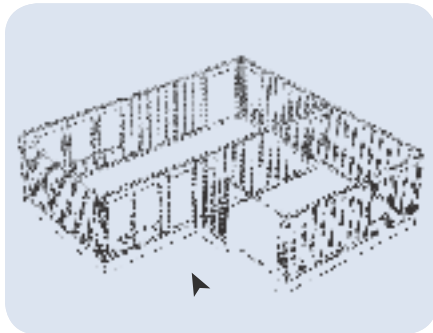
Alliance Construction Solutions  
 Ames Construction, Inc.  
 Barnard Construction Co., Inc.  
 Bosco Constructors, Inc.  
 Braconier Plumbing & Heating Co., Inc.  
 Building Material Holding Corporation  
 Collins-Kiessig General Contractors, Inc.  
 Commercial Roofers, Inc.  
 D. H. Blattner & Sons, Inc.  
 Dohn Construction, Inc.  
 Drahota Construction Company  
 Gallegos Construction Co.  
 GE Johnson Construction Co.  
 General Construction Co.  
 Genesis Homes, LLC  
 Glacier Construction Co., Inc.  
 Granite Construction Company  
 Haselden Construction, LLC  
 Hensel Phelps Construction Co.  
 Hydro Construction Co., Inc.  
 ISEC, Inc.  
 JE Dunn Construction  
 Dr. James Young  
 John West  
 Phase 2 Company  
 Pinkard Construction  
 Ryland Homes  
 Saunders Construction, Inc.  
 Scott Griffin

## High Tech Homebuilding

Imagine you're a framer working on a new housing development. When you get to the job site in the morning, you boot up a computer and watch a video that shows step-by-step the framing that's scheduled to be done that day. A package of the day's materials – already cut and ready to assemble – has been delivered. You put on your tool belt, grab your nail gun, and get started.

CM faculty and students are using computer-aided design to virtually build six different home models for Genesis Homes in Denver. The goal of the \$40,000 research project is to drive down the price of entry-level homes by improving productivity and reducing waste.

"We're using a three-dimensional CAD system to build these homes piece by piece," says Associate Professor James Folkestad. Folkestad and Associate Professor Bolivar Senior are the project's co-principal investigators.



Ph.D. student Brad Johnson and undergraduate student Ryan Hodack are providing their practical experience to the project. Over the summer the students worked with Genesis Homes to build actual prototypes at the 1,350-unit project site north of Brighton, Colo. With that experience, researchers then used CAD to memorialize the homebuilding process and create virtual building plans in the form of a book and a movie.

"The idea is that when a house is precisely defined virtually, it will fit in reality," says Folkestad.

The key word is precision. By building the homes on a computer one piece at a time, researchers will create a set of

definitions for precisely how long and at what angle every piece of wood needs to be cut. With this knowledge, materials can be pre-cut at the mill and the entire package delivered to the job site. Skilled laborers can then assemble the homes following written and animated instructions that show the building process one step at a time, from framing, electrical, plumbing, and HVAC to trim and finish components.

"Effectively we're building a model kit," says Miles Grant, '75, CEO of Genesis Homes. "If they follow the instructions, 20 different people will build the same home in exactly the same way."

Folkestad notes that the virtual building process will still allow builders to make improvements often discovered while constructing a home. Such improvements can be incorporated into the computerized model and adjustments made as needed.

The research project with Genesis Homes is similar to another "lean construction" project Folkestad has proposed to the National Science Foundation. Under a three-year, \$300,000 grant, Folkestad and his research team will apply technology and principles of construction management to advancing the concept of lean construction.

"There is a body of knowledge associated with 'lean' that can be applied to construction," Folkestad explains. The variables affecting lean construction are sequencing and speed and the relationship between the two. The research team will address the question: How can we use virtual models to better plan and predict these variables?

Folkestad believes that using three-dimensional CAD designs for virtual homebuilding will enable lean construction by using new knowledge to plan ways to increase productivity.

"Our hypothesis is that in the future we can radically change the sequence of how things are done," says Folkestad. "Instead of having individual trades working on individual components of a building project, we'll have more of a melding – more people working together to keep production moving along at all times."

## Timber!

The City of Fort Collins recently established the Gardens of Spring Creek to enrich people's lives and foster environmental stewardship through horticulture. When developing shade structures for the gardens, the city took the notion of environmental stewardship one step further: They built the structures from wood thinned from Colorado forests as part of the state forest service's fire mitigation and restoration efforts.



The project was initiated through the CM department and the Colorado Wood Utilization and Marketing program, a collaboration of colleagues from the Department of Construction Management, the Department of Forest, Rangeland, and Watershed Stewardship, the Colorado State Forest Service, and the USDA Forest Service. The program's aim is to create demand for wood removed from the state's forests. Developing new markets for Colorado wood by-products helps offset the cost of forest clearing to prevent large-scale wildfires and catastrophic insect and disease outbreaks.

"When the city was ready to build the shade structures, we saw this as an opportunity to help get something built using Colorado wood," says Gailmarie Kimmel, a CM research associate and member of the Colorado Wood Utilization and Marketing program.

The project involved the CM department, students and faculty





*Left and above: Students build shade structures for community gardens using wood thinned from Colorado forests.*

from the College of Agricultural Sciences, the city, and the Colorado State Forest Service.

This past spring, students in Zach Johnson's landscape design and contracting class designed and built the shade structures as a class project. Before they began construction, CM Professor Steve Jaouen provided a safety workshop for the students. Kimmel and CM Professor Chris Koziol identified the partners and coordinated the delivery of wood from a local mill, and the city orchestrated the overall project.

"The city opted for Colorado wood, because this was a way to educate people coming through the gardens about their relationship to sustainable forest management," says Kimmel, who is working with city employees to develop the gardens' interpretive signage.

Another avenue Koziol and Kimmel are exploring is using Colorado wood as a fuel to heat buildings. The challenge, says Kimmel, is creating a demand in the marketplace for woody biomass as a fuel. "When consumers see the economic benefits of bioheating with wood chip and pellets, that will help offset the cost of forest restoration and fire mitigation.

"We continue to explore ways to create market demand for Colorado wood by developing more value-added products," adds Kimmel. "This is one example of how the Department of Construction Management is involved with effective stewardship of the land."

## Cultural Development



*Henry Red Cloud and Kathryn Harrison at the EPA exhibit in Washington, D.C.*

**W**hen students in Professor Brian Dunbar's Advanced Sustainable Housing course asked Oglala Lakota Nation members what their ideal community would look like, they said they envisioned homes that could provide for circular gatherings, with a hearth at the center and a front door facing the rising sun. Their vision was remarkably similar to the students' preliminary designs.

Last spring, Dunbar's students visited with the Oglala Lakota Nation to gain a greater cultural context for the sustainable housing designs they'd begun developing in Dunbar's course the previous fall. Dunbar, director of the Institute for the Built Environment, worked with students to develop the special course after receiving a \$10,000 Environmental Protection Agency P3 (People, Prosperity and the Planet) grant.

Dunbar's students worked with Ina Maka O Tipi (Living With Mother Earth), a collaborative organization that includes a number of Fort Collins-based groups, committed to improving living conditions on South Dakota's Pine Ridge Indian Reservation, one of the poorest areas in the U.S. "Many of the residents live in mobile homes or substandard housing and spend nearly 25-percent of their income on utilities," says Dunbar.

In the special course students learned about sustainable building technologies as well as environmental, economic, and cultural issues specific to Pine Ridge and the Oglala Lakota Nation.

"We all had an interest in sustainable building and were challenged to generate ideas for a specific place," says course participant Kathryn Harrison. "We wanted to develop feasible sustainable building ideas that would also comply with the culture."

The course culminated in a series of collaborative design charrettes involving Dunbar's students, students in the CM program at Oglala Lakota College, and Pine Ridge residents. At the charrettes, students exhibited their research, including ideas for passive-solar heating, earth-sheltered housing, and circular landscape planning.

In May, Harrison and Henry Red Cloud, who has helped lead sustainability efforts at Pine Ridge, presented the design ideas to the P3 judges in Washington, D.C. Out of 65 colleges and more than 400 students competing, Colorado State received an honorable mention.

"Now that we're aware of the conditions at Pine Ridge, we're looking for more opportunities to work with the Oglala Lakota Nation," says Harrison. "We want to establish an ongoing relationship between the Oglala Lakota community and the Colorado State group."

**“You have to dream and then go after your dream and try to make it happen. Whether I do this or somebody else takes this dream and does it doesn't matter. What's important is starting something that will have a positive impact on a lot of people, here and, especially, in Egypt – the culture that contributed to my life and to who I am.”**

– Mostafa Khattab

## **Professor Builds on a Dream**

**C**M Professor Mostafa Khattab, born in Egypt, cares as much about his homeland and culture as he does about his family, his students, and his responsibilities at Colorado State.

Two years ago, after Egypt's president challenged the people to develop creative solutions for the country's problems – one of which is affordable housing – Khattab wrote the president a letter. He proposed establishing a partnership between Colorado State's



*Professor Mostafa Khattab talks to a class about his plans for development in Egypt.*

CM program and a university in Egypt to provide project management learning, research, and hands-on experiences for students at both universities. Ultimately, the partnership would focus on developing an affordable, sustainable community in Cairo.

Khattab never expected the president to respond. “But you have to do what you believe is right and then let whatever happens happen,” he says.

In January 2004, Khattab was asked to meet with Egypt's prime minister, and from there his idea took off.

Khattab has since received a \$100,000 grant from the American Liaison Office of University Cooperation in Development, to establish a partnership with engineering and business administration faculty at Cairo's Helwan University. Faculty from both schools are working with a program coordinator to develop a multi-discipline, multi-culture online course in project management.

About 30 students from each university will take the course via WebCT. Video-conferencing will allow them to interact face-to-face, and service learning projects will provide them with actual construction experience. They will also research new, more cost-effective and environmentally sustainable building materials.

One material that holds promise as a sustainable product Egypt could manufacture using agricultural waste is a type of drywall made from wheat by-products. The Australia-based manufacturer, Durra, has agreed to donate and ship enough wheat-drywall to Cairo, where partnering faculty, students, and construction companies will work together to build a pilot single-family dwelling.

As more people learn of the Egypt partnership, enthusiasm grows. In June, Khattab met with Helwan University faculty and also with faculty from the Arab Academy for Science, Technology, and Maritime Transport who also wish to be engaged in the partnership. The academy has a construction management and engineering program that will complement related programs at the other two institutions. (Discussions are now taking place between the academy and Colorado State to develop a joint master's degree program in which students would complete their studies and internships in both Egypt and the U.S.).

Khattab hopes the international partnership will create a model that will be copied by other communities, other nations, and other universities.



## More Than Meets the Eye

After graduating in 1987, Lt. Col. Dave Eaton set his sights on becoming a commissioned Air Force officer. He gave little thought about how his CM degree would serve him.

All that changed five years later when the Gulf War, and Eaton's job on the missile crew, ended. He soon landed work with Air Force's civil engineering.

Over the years, Eaton's found himself succeeding time and again in a number of different jobs, working with different people in challenging situations. In a recent letter to the University, Eaton wrote: "From humanitarian work at mudslide and earthquake areas in Italy, to managing all the base infrastructure at locations in Kuwait and the United Arab Emirates, to my current project of permanently repairing a major runway

in Iraq, my basic understanding of all the construction disciplines has paid huge dividends for me."

Now an Air Force civil engineer in Iraq, Eaton says his work requires an understanding of engineering principles and effective communication and management skills, all of which he says his CM degree provided. "The biggest advantage I've had with my CM background is to be able to put engineer-speak into plain English," he adds.

Eaton advises students and other graduates not to underestimate the value of their broad-based CM education. "It wasn't until I'd been in civil engineering for a few years that I realized what a gem I had in my hand."



*Lt. Col. Dave Eaton in Iraq*

## Virtual Construction

**F**ive years ago, while Daniel Libeskind was designing a new wing for the Denver Art Museum, the building process had already begun, says Dave Sandlin, '03, a construction executive for M.A. Mortenson Co. and manager of the \$90-million Frederic C. Hamilton Building.

Using 3-D tools before any actual construction commences, the building process continues to this day.

It's hard to imagine how the 146,000-square-foot addition could be effectively built otherwise. Described as "a geometric explosion of glass and titanium" and containing no 90-degree angles, the building will hold itself together only when it's fully erected.

"It's very difficult to analyze and view this incredible 3-D design in two dimensions," says Sandlin. With 3-D software, however, M.A. Mortenson Company can utilize, develop, and refine color models that show every single detail inside the wing. The process enables team members, including Studio Daniel Libeskind, Davis Partnership, the City and County of Denver, and the Denver Art Museum, to trade the models back and forth and identify and resolve potential problems even before materials are ordered.

By adding the fourth dimension of time, planners are creating movies that show how each phase of construction should proceed according to target dates.

"These 3-D and 4-D tools have made this complicated and challenging design possible to construct on time and within budget," says Sandlin. "I believe these tools are revolutionizing the construction industry, and I'm excited to play a small part in furthering this initiative."

Sandlin says the greatest reward of this experience has been watching the entire team he's working with perform and succeed at such a high level. "It's been a privilege and a career highlight for me to be a part of the delivery of this unique and challenging project."



*Rendering of the new wing on the Denver Art Museum*

## Hensel Phelps Hosts Reception

More than 50 construction management alumni and Ram supporters were treated to Joseph Phelps' wine and gourmet cuisine prior to the CSU-USC game last September. The event was hosted by the Hensel Phelps Construction Company, whose Southern California office is led by CSU alumnus Wayne Lindholm, '75. The reception was held at the St. Regis Monarch Beach Resort and Spa, built by Hensel Phelps Construction Company.

Save  
the Date!

## 2006 Ram Built Gala/ 60<sup>th</sup> Anniversary

In 2006, construction education at Colorado State will celebrate its 60<sup>th</sup> anniversary, and Ram Built Gala III will celebrate this historic milestone. The gala will feature a black-tie-and-jeans theme along with cocktails, a silent auction, dinner, awards program, entertainment, and dancing.

"My goal is to have 600 people join the celebration," says department Head Larry Grosse. Watch for additional information coming soon about the 2006 Ram Built Gala/ 60<sup>th</sup> Anniversary.

Gala proceeds will support construction management's James Parnell Student Professional Development Fund, which enables students to hone their skills by developing solutions to actual construction scenarios presented at regional and national competitions.

## Ram Built GALA II

Construction Management's Ram Built Gala II raised more than \$30,000 for the James Parnell Student Professional Development Fund, thanks to the 440 alumni, friends and industry supporters who attended. Held at the Holiday Inn DIA, the event featured a construction zone motif. A special thanks to Wagner Equipment Co. for providing a Caterpillar motor grader and other pieces of heavy equipment to help create our construction zone atmosphere.

The Professional Advisory & Development Board came up with the idea for the annual fundraiser, which also provides an opportunity to build new friendships and recognize individuals for their outstanding support of the CM program.

This year's Hard Hat Award went to Vice Provost Kevin Oltjenbruns for her support of construction education from the University community. "Having once served as CM's interim department head, Kevin fully understands the national demand for our graduates," said Larry Grosse, CM department head. "She's watched our program more than double in size over the past nine years, and has helped us accommodate this growth by providing us with additional resources."

Ben Connell of Connell Resources received the 2005 Wall of Honor Award, given to an individual industry member who has provided leadership and support for construction education. "As past president of the Colorado Contractors Association, Ben was instrumental in providing support for our Heavy Construction Management Endowed Chair Campaign," said Grosse. Connell Resources made a lead gift of \$250,000 and has also made its offices and staff available to CM students, allowing them to use specialized construction technology, such as digitizers and estimating software.



*Clockwise from upper right: Larry Grosse presents Kevin Oltjenbruns with the Hard Hat Award. CM faculty and staff with their spouses at the Gala. CAT equipment provided by Wagner Equipment Co. Larry Grosse presents Ben Connell with the 2005 Wall of Honor Award.*



## A Hole-in-One for CM Education

**A** golf tournament and pig roast sponsored by ARS, Inc. every August represents a unique construction industry/

University partnership. Each year, the tournament raises more than \$15,000 for Colorado State's Heavy Construction Management Endowed Chair campaign.

"Supporting construction education at Colorado State is an investment in the future of the construction industry," says Scott Reynolds, vice president for ARS, Inc., who realized the value of the program while doing campus interviews to hire CM students for summer jobs at ARS, Inc. In 2004, Reynolds and ARS, Inc. CEO Kim Haarberg approached



Larry Grosse, left, receives donation from Scott Reynolds, ARS, Inc.

CM Department Head Larry Grosse and proposed sponsoring an annual golf tournament that would benefit construction education at Colorado State.

Held each August at Arrowhead Golf Club in Littleton, Colo., the tournament draws 132 golfers and offers participants three opportunities to win hole-in-one prizes of \$25,000, \$50,000, and \$1 million, respectively. (No one's won yet, although one person came within three inches of winning last year.) Afterwards, ARS, Inc., hosts a pig roast at its Littleton headquarters.

Supporting construction education through the tournament, says Reynolds, "benefits all of us in the construction industry by giving us good people to work with. It's a fun way to support a great program that in return helps individual contractors, the region, and the industry."

### Golf Tournaments Benefit Students

Two other annual golf tournaments also assist students pursuing a degree in construction management by supporting scholarship endowments:

- CFMA Golf Tournament, held in Denver each June – Endowment Balance, \$41,128
- annual KEM Homes Golf Tournament for the Greg Keller Scholarship, held in Fort Collins in July – Endowment Balance \$44,905

## Computer Lab Update

**D**uring the summer, an area on the second floor of the Industrial Sciences building has been restored to its late 1800's glory and converted into a new computer lab designed for upper level CM classes. The design of the classroom was sensitive to historical issues under the guidance of professors Chris Koziol, Brian Dunbar, and Larry Grosse. The construction work was accomplished by Professors Steve Jaouen, Chuck Smith, Brent Sigmon, Lab instructor Kevin Jones, Ron Renner, intern Brian Doerr, and Scott Baker. Thank you to Phase 2 for doing the drywall and Interface Carpet for their donation of carpet. The new Computer Lab will have 24 stations along with an area for digitizers and printers. To cover the cost of restoring the Computer Lab, the Department is offering an opportunity to place your company logo and any company information on a 3' x 5' professionally prepared board that will be mounted in the classroom. If you are interested, please contact Larry Grosse at [drfire107@mindspring.com](mailto:drfire107@mindspring.com).

A Ring of Industry Hardhats will be mounted in the new Computer Lab. Every company who recruits CM students at CSU is ask to provide a new hardhat with your company logo installed on the side or front of the hardhat for display.

## Scholarship News

In fiscal year 2005-06, the department awarded 42 scholarships, totaling \$66,319 and including two new scholarships: the Tom McHahon Memorial Scholarship and the Raquel Martinez Memorial Scholarship. The annual scholarship dinner to honor donors and recipients will take place Sept. 22, 2005.

## Campaign Update

### Heavy Construction Management Endowed Chair Initiative

Goal: \$3 million  
Amount raised as of 6/30/05: \$980,000

### James Parnell Student Professional Development Fund

Goal: \$250,000  
Amount raised as of 6/30/05: \$112,000



Computer Lab under construction.

## New Green Building Certificate Program

New in 2005 is the CM department's 12-week Green Building Certificate Program, an accelerated evening program providing critical knowledge about emerging practices in commercial and residential building. Registrants for this popular program may take it at either the Denver Center or the main Colorado State campus in Fort Collins.

For more information, contact Gailmarie Kimmel at (970) 491-3260 or [gmkimmel@cahs.colostate.edu](mailto:gmkimmel@cahs.colostate.edu) or visit [www.ibe.colostate.edu](http://www.ibe.colostate.edu).

## Popular Certificate Programs

Certificate programs provide an easy way for CM professionals to enhance their current careers or prepare for a new career. Current CM certificate programs offered at Colorado State University's Denver Center are:

- Construction Management
- Financial Management for Constructors
- Advanced Estimating

For more information on any of the above CM certificate programs, or to register, call Kate Pennella, (303) 376-2605, or visit <http://www.learn.colostate.edu/certificates/>

## Green Living!

Colorado State's new \$45 million Academic Village may feature such sustainable building elements as stone recovered from demolished buildings on campus, low-flow plumbing fixtures, recycled-content flooring, and on-site power generation. Last spring, students enrolled in Professor Brian Dunbar's graduate-level course, Sustainable Technologies in the Built Environment, presented these and other sustainable building ideas to the architects and CSU staff involved with the project.

Designed for 420 on-campus students, the village – a cluster of buildings surrounding a central plaza – will create a space that integrates residence life with academic activities. Each building will include a living section with residence hall rooms and multi-purpose spaces that can be devoted to classrooms, seminars, laboratories, faculty and graduate student offices, and social areas. A separate commons building will feature a dining facility and additional multi-purpose space.

Students studying construction management, landscape architecture, interior design, and mechanical, electrical, and civil engineering, as well as students in the Resident Hall Association, are involved in various aspects of the project. The students are working to incorporate actions that raise resource awareness, promote sustainability, and decrease resource consumption as a model for future campus construction.

Involving students in the design process is part of the overall concept of making

the village a project that teaches by being environmentally sensitive, says Josie Plaut, a CM graduate student with an emphasis in sustainable building. "Professors will be encouraged to develop classes that use the buildings to teach students about elements of sustainable design, engineering, and construction. Residents may participate in activities that teach them how to be more environmentally responsible occupants of their buildings."

Representing the CM department's Institute for the Built Environment (IBE), Plaut is part of a team that is researching sustainable building technologies and materials and suggesting ways to incorporate green building practices into the Academic Village. The IBE is also helping to set sustainability goals for the project and create sustainable design guidelines for all University housing projects, adds Plaut.

Building commissioning and energy modeling are two green building strategies that have already been selected. With monies received from the City of Fort Collins and the State of Colorado, the University will employ a commissioning agent to thoroughly check the design and installation of green building strategies and mechanical systems in the complex. Energy modeling will enable the University to save money over the life of the building by selecting the most economical ways to save the most energy.

The Academic Village site is south of the intramural fields on the main campus.

## A Master Plan

Colorado State and Iowa State are proposing to capitalize on their construction education strengths to develop a new master's degree program in construction management. The distance-education program will also include a collaboration with the Associated General Contractors of America, one of the country's largest construction organizations.

"We're linking the universities' academic programs with AGC's certificate programs, so that students can apply for credits toward a degree," says Larry Grosse, head of Colorado State's CM department. "Our goal is to implement the program in 2006."



# Building for the Future

## Curriculum Re-focus

The changing face of the construction industry is driving the CM department to revitalize its curriculum. Early last year, Department Head Larry Grosse challenged the faculty to critically review and revise the curriculum to meet the needs of the industry for the future. "I want to create an integrated class where our seniors can practice all the skills they've learned during their academic career," says Grosse. He also asked industry members to become involved with the curriculum review process and help with the development of future classes.

Professor James Folkestad has spearheaded the effort to review the CM curriculum and revitalize it to better prepare students to be customer-service-oriented project managers. Members of the department's Professional Advisory & Development Board (PADB) said the program needed to incorporate two skills essential to customer service: communication and integration. Industry members also recommended the curriculum include pre-construction activities.

"Managing projects requires much more integration of knowledge and the ability to communicate with lots of different people," Folkestad explains. "When clients accept a bid or proposal, they want to know how you're going to manage all the people you'll be working with – from city departments and government agencies to owners, sub-contractors, and suppliers. Managing those relationships is all about communication."

Faculty members and focus groups provided additional input, and two new upper-level courses were developed focusing on integration and communication. Students will enter the courses with an established skill set, then put their skills and knowledge to the test.

Juniors taking the new Construction Project Administration course, for example, will spend a semester developing solutions to a series of construction case studies and then learn how to communicate their solution



*CM students survey the CSU Oval.*

effectively. They will identify their audience, practice communication skills, such as writing clear, concise memos, and present their plans to the class.

The senior capstone course, Integrated Project Management Simulation, is modeled after the Associated Schools of Construction annual student team competition. Seniors will work in teams to manage a simulated, mixed-use project from concept to completion. This activity will consist of pre-construction activities, which include RFP, schedule, budget, and contingency plans, and then project management. The student teams will then present their project plans, which will be critiqued by members of the construction industry.

"Those two courses have been the focal point of the revitalization," says Folkestad. The sequencing of supporting courses have changed somewhat but the content remains the same.

Last spring, the PADB gave the curriculum changes a thumbs-up. This fall, the revitalized curriculum will go through various review channels with plans to introduce it in fall 2006. A transition plan will be in place for students presently enrolled in the program.

## Hot New Degree for Firefighters

In response to an overwhelming demand, the CM department will soon offer a new bachelor's degree program in Fire and Emergency Services Administration, tentatively scheduled to begin in fall 2006.

Warren Jones, a Colorado State Ph.D. candidate and retired fire authority, is coordinating the development of the curriculum. The 2 + 2 program will require students to earn an associate's degree in fire science technology, followed by two years of fire and emergency service management classes at Colorado State, taught via distance education.

To learn more, contact Department Head Larry Grosse at [drfire107@mindspring.com](mailto:drfire107@mindspring.com).

# FESA

## Applause!

The department is proud to acknowledge the following faculty and staff who received recognition in 2004-05:

### **Becky Bell, Graduate Student Liaison and Department Secretary**

Named a Colorado State University "Everyday Hero" for her tremendous compassion and drive and for going beyond the call of duty to serve students and respond to requests from faculty.

### **Larry Grosse, Department Head**

Received the 2005 Associated Schools of Construction Outstanding Educator Award.

### **David Gunderson, Assistant Professor**

Received the 2005 Associated Schools of Construction National Teaching Award.

### **Stephen Jaouen, Assistant Professor**

Received the Waterpik Excellence in Education Award for his outstanding effort in helping to shape the future of education. Also received CSU Greek Life Recognition of High Educative Standards Award for promoting and maintaining an environment conducive to learning.

### **Sue Wagner-Renner, Financial Officer**

Named a Colorado State University "Everyday Hero" for her extraordinary dedication and work ethic, her tireless efforts, and her enthusiasm and love for her job.

## Career Fair – Times Two

In February, 54 construction organizations attended the second annual Construction Management Career Fair. The event attracted well over 300 CM students and alumni seeking full-time, internship, and summer employment. The industry response was so overwhelming that the department is now sponsoring a Career Fair each semester, says Jeni Moore, Coordinator of the Phelps Internship Placement Office.

The next fair, Sept. 20, will be held at the more spacious Hilton Fort Collins, one block south of campus. The spring Career Fair will take place next February.

"Scheduled before on-campus senior and internship interviews, the Career Fair is a great way for companies to get a head start on hiring from more than 800 students enrolled in the CM program," says Moore. In December, 100 students will graduate and another 45 will be seeking six-month internships. In the spring semester, another 100 will graduate with over 200 seeking internships and work-experience.

The Career Fair attracts companies nationwide, from homebuilders, specialty subcontractors and integrated real estate services to disaster reconstruction and restoration services, defense electronics, heavy and highway construction, and the country's largest general contractors. "We have companies coming from California to Florida, in every size and shape," says Moore. "This diversity is the real strength of the Career Fair."

The Career Fair welcomes all CM students and alumni. For more information, visit [www.caahs.colostate.edu/cm/career\\_fair.stm](http://www.caahs.colostate.edu/cm/career_fair.stm). You may also contact Moore at (970) 491-4610 or via e-mail at [moore@caahs.colostate.edu](mailto:moore@caahs.colostate.edu).

## The Growth of Construction Education at Colorado State

### Undergraduate Enrollment, 1996-2005

Academic Year	# of Students Enrolled
2005-2006	800*
2004-2005	684
2003-2004	627
2002-2003	558
2001-2002	513
2000-2001	446
1999-2000	412
1998-1999	374
1997-1998	378
1996-1997	360

### Graduate Student Enrollment, 1996-2005

Academic Year	Fall Enrollment	Spring Enrollment
2005-2006	*78*	TBD
2004-2005	66	60
2003-2004	58	62
2002-2003	47	45
2001-2002	42	46
2000-2001	38	43
1999-2000	39	36
1998-1999	25	28
1997-1998	26	22
1996-1997	17	16

\* projected for Fall 2006

### Peer Programs

Institution	Fall 2005 Undergraduate Enrollment
Colorado State	800
Texas A&M	610
Purdue	536
Auburn	480
Arizona State	378
Virginia Tech	200



## Building History

**A**s historic preservation gains prominence with more and more private and public sector decision makers, the demand for effective management techniques and well-trained managers also grows. Colorado State's Architectural Preservation Institute (API) advances state-of-the-art educational services in preservation technology through its resource center, graduate student training, and workshops.

Over the summer, Colorado State's API offered two workshops, "Stepping into the boots of the builder: Local sourcing and crafting of wood and stone" and "A crafts-based approach to assessment and stabilization of historic wood structures."

Workshop participants worked together to assess and stabilize the Bingham Homestead barn west of Fort Collins. The rare timber frame barn, built in the late 1800s, needed stabilization.

API Director Chris Koziol says the barn presented an outstanding opportunity



*Workshop participants worked together in June to help stabilize the historic Bingham Homestead barn west of Fort Collins.*

for workshop participants to work on a large project.

For more information about future API workshops, call Chris Koziol at (970) 491-5665, e-mail at [koziol@cahs.colostate.edu](mailto:koziol@cahs.colostate.edu), or visit [www.api.colostate.edu/workshops.htm](http://www.api.colostate.edu/workshops.htm). The summer workshops were sponsored in part by the Colorado Historical Society, State Historical Fund.

## CSU to Host 2006 ASC Conference

**N**ext April, construction educators and industry leaders nationwide will convene in Fort Collins for the 42nd annual Associated Schools of Construction (ASC) conference.

Since forming in 1965, the professional association has helped to pave the way for excellence in construction education. The ASC helped to establish the American Council of Construction Education, the accreditation body for construction education nationwide, as well as the American Institute of Constructors, the *AIC Journal*, and the *International Journal of Construction Education and Research*.

By sharing ideas and knowledge, ASC's 97 members inspire, guide, and promote excellence in curricula, teaching, research, and service and help develop leadership for the construction industry.

"The ASC is the U.S. leader in promoting excellence in construction education," says ASC President Mostafa Khattab, a CM professor at Colorado State. "It's also building the infrastructure for construction education across the U.S." The organization is presently addressing three challenges: developing construction education faculty; initiating Ph.D. programs in construction management, and creating leadership for the industry and for construction education.

"Hosting the conference here will provide an opportunity for Colorado State to showcase its facilities and demonstrate what partnering with industry can do, such as the classrooms that have been renovated without any state dollars," says CM Department Head Larry Grosse.

For more information on the ASC or the 2006 conference, contact Mostafa Khattab, (970) 491-6806, or via e-mail, [Mostafa.Khattab@colostate.edu](mailto:Mostafa.Khattab@colostate.edu).

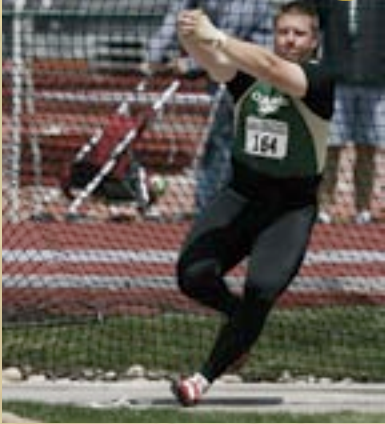
**The department is positioning itself for the future by addressing the needs of our industry and then providing our students with the knowledge required to be successful. Colorado State's construction education programs are recognized as being among the leading programs in the nation.**

**– Dr. Larry Grosse,  
CM Department Head**



# Class Notes

## Our All-American



Senior Adam Trainor earned All-American in 2005, finishing eighth in the hammer with his throw of 207-5 – his first-ever All-American award.

## CM Student Ties Fund-Raising Record

Last spring Adam Seader, a senior in construction management, became only the second student in Call-A-Ram history to reach \$100,000 in pledges. Seader has been a Call-A-Ram employee since 2001, working in the Division of University Advancement to raise money to support student scholarships, capital campaigns, and other CSU fund-raising needs.

**Ronald V. Penn** (1971, Industrial Construction Management), U.S. Department of State, 9808 Sharon Court, Fairfax, VA 22032, pennrv@state.gov. DMG graduate 1971; U.S. Army Corps of Engineers through 1983; private sector (USAA Project Manager) through 1992; civil service U.S. Department of State currently working in physical security construction. Master's in systems management from USC; certified cost engineer; certified Project Management Professional; extensive international experience; motorcycle enthusiast.

**Jim Stutler** (1976, Industrial Construction Management), Tierdael Construction Co., 2015 Chelsea Court, Highlands Ranch, CO 80126, jstutler@tierdael.com. President of Tierdael Construction Co., a heavy-utility general contracting firm in Denver. Also currently serving as senior vice president of the National Utility Contractors Association.

**Bo Baggs** (1978 BS; 1989, MS, Industrial Construction Management), self-employed under contract to Murphy Oil – Sabah Ltd., 3565 Lake Arthur Drive, Port Arthur, TX 77642, e-mail: BO5483@netscape.net. On three-year assignment for Murphy Oil in Kuala Lumpur, Malaysia, on Malaysia's first deepwater oil and gas production project, Kikeh Project.

**Ken Scrivner** (1982, Construction Management), Kinetics, 2065 NW 156th Ave., Beaverton, OR 97006, kscrivner@kineticsgroup.com. Union card holder, boiler maker, moved 17 times in 22 years, has two children, has a great marriage, and has only worked for three companies. Senior project manager of a \$65 million mechanical project (Detroit VA Medical Center, Ken has 10 years leading the mechanical contracting industry in San Francisco. Currently he is vice president of

Kinetics, overseeing \$40-45 million a year in mechanical contracts in the Northwest.

**Paul Force** (1984, Industrial Construction Management), The Conti Companies, 284 North Rd, Chester, NJ 07930, pforce@conticorp.com. Chief information officer; recently completed implementation of People Soft Enterprise One for national heavy-highway and federal environmental remediation firm.

**Clyde E. Trego Jr.** (1988, Construction Management), Actos Leud Lease, 2470 Balfour Ct., Napa, CA 94558, Clyde.Trego@Actosleudlease.com. Senior manager of Design and Technical Services with corporate offices in Hawaii, Napa, and Nashville.

**Dave Sandlin** (2003, Construction Management), a construction executive for M.A. Mortenson Co. (see article on page 7), is pursuing his master's degree in construction management at CSU. He started at CSU in 1976, then worked in the construction industry for more than 20 years before earning his CM bachelor's degree at age 45. "Next to raising my family, that's my proudest accomplishment," he says.

## In Memory

**Lorienne Eve Arnold** (1999, Construction Management), died on July 7, 2005, at her home in Satellite Beach, Florida. She was 30 years old.

**Michael D. Villarreal**, senior intern working for Lennar/US Home was in a fatal automobile accident on July 9, 2005, in Windsor, Colo. Villarreal was from Wheatridge, Colo., and was born March 10, 1981. He was a member of the Sigma Alpha Epsilon fraternity and is survived by his family in Wheatridge.

## Congratulations to Our Newest CM Graduates



December 2004



May 2005



# Speak Up! Let Your Success Be Known

**A**s Colorado State's Department of Construction Management embarks upon its 60<sup>th</sup> year, we are compiling a history of the department and its significant milestones. We'd also like to identify as many as possible of the construction industry leaders that have graduated from our program. Your accomplishments have helped our program attain recognition as the leading construction management program in the nation.

Please use the "We Love Hearing From You" form on this page to let us know if you are a CEO, COO, President, Director, or Owner of a construction organization, or if you know of other Colorado State CM alumni in leadership roles. Identifying our alumni leaders in construction will allow us to recognize them in the Halls of Guggenheim, providing inspiration to others striving to reach their highest potential.

Thank you for your help.



## We Love Hearing from You!

Please let us know of any career advancements, personal achievements, or other news you'd like to share since graduating from Colorado State. You may use this form to (please check all that apply, and make duplicate copies as needed):

- Send news about yourself
- Add your card to the Wall of Honor (include business card and check for \$25)
- Identify a Colorado State CM graduate who is a leader in the construction industry.

Year of graduation: \_\_\_\_\_ Major: \_\_\_\_\_

Your name: \_\_\_\_\_

Your company name: \_\_\_\_\_ Your title: \_\_\_\_\_

Your home address: \_\_\_\_\_

Your phone: (W) ( \_\_\_\_\_ ) \_\_\_\_\_ (H) ( \_\_\_\_\_ ) \_\_\_\_\_

Your e-mail address: \_\_\_\_\_

### NEWS BRIEF

Personal and/or professional news about yourself:

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### WALL OF HONOR

- Business card enclosed
- \$25 check enclosed payable to CSU Foundation.

### CONSTRUCTION INDUSTRY LEADER

Please include name, title, organization, and contact information, if different from above, and any other information you'd like to add:

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### MAIL TO:

Sue Wagner-Renner, Department of Construction Management, Colorado State University,  
1584 Campus Delivery, Fort Collins, CO 80523-1584.

## Your Honor

The CM department invites all its alumni, and construction companies who hire CSU graduates, to become a part of the department's Wall of Honor.

The Wall of Honor recognizes CM graduates by permanently displaying their business cards under glass in Guggenheim's central hallway.

To add your name to the growing list of professionals who are CSU graduates, send your business card and a minimum donation of \$25 per card to Sue Wagner-Renner, Department of Construction Management, Colorado State University, 1584 Campus Delivery, Fort Collins, CO 80523-1584. Please make your check payable to CSU Foundation.

# Events

## 2005

- Aug. 22 ..... Fall semester begins  
Sept. 13 ..... Denver Green Building certificate classes begin  
Sept. 14 ..... Denver CM certificate classes begin  
Sept. 20 ..... Fall CM Career Fair  
Sept. 22 ..... CM Scholarship Dinner  
Sept. 26-29 ..... Mobile Sources Clean Air Conference, Keystone  
Sept. 30 ..... 1870 Donor Recognition Dinner  
Oct. 8 ..... Homecoming Weekend: CM Department Continental Breakfast at Guggenheim Hall  
Oct. 20 ..... PADB Meeting  
Dec. 16-17 ..... Fall Commencement

## 2006

- Jan. 11-14 ..... NAHB student competition, Orlando  
Jan. 17 ..... Spring semester begins  
Feb. 8-11 ..... ASC student competition, Reno  
Feb. 22-24 ..... Rocky Mountain Asphalt Conference and Equipment Show, Denver  
Feb. 16 ..... Spring CM Career Fair  
Mar. 19-23 ..... MCAA student competition, Maui  
March 11-19 ..... Spring Break  
March 15-19 ..... ABC student competition, Las Vegas  
April 19-22 ..... National ASC Conference  
May TBD ..... Ram Built Gala/60<sup>th</sup> Anniversary  
May 12-13 ..... Spring Commencement

For further information, visit the department's Web site at [www.caahs.colostate.edu/CM](http://www.caahs.colostate.edu/CM) or contact Sue Wagner-Renner at [wagner@caahs.colostate.edu](mailto:wagner@caahs.colostate.edu).

*Photo: Renovated staircase in Guggenheim Hall*

*Knowledge to Go Places*

**Colorado  
State  
University**

Department of  
Construction Management  
1584 Campus Delivery  
Fort Collins, Colorado 80523-1584