

March 2006  
Civil Engineering Department  
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# ***CIVIL ECHOES***

## ***ROSE-HULMAN INSTITUTE OF TECHNOLOGY***

### **Chairman's Perspective**

The Civil Engineering (CE) Department hosted the Board of Advisors and Associates for a day at the beginning of the winter quarter. The Board reviewed senior design projects in the morning, and attended the ASCE student chapter banquet for lunch. The keynote speaker was our own Renee Schwecke (Class of '98) who spoke on "Marketing Yourself and Your Company as a Young Engineer." Renee is a project engineer for HDR Engineering, Inc. in Phoenix and is very active in ASCE, serving in various leadership roles at the younger member, branch, and national levels. The students were very interested in her presentation, and we are glad to have her join our Board.

After the banquet, the Board participated in focus groups to help craft our future CE program. In conjunction with 2015 planning on campus and our 2012 accreditation visit, we are looking ahead to the next decade of excellence at Rose-Hulman Institute of Technology. We will continue to emphasize a rigorous and practical CE education leading to early career accomplishments and professional registration. Emphasis in the next decade may very well include more leadership (entrepreneurial and managerial) training, focus on life-long learning, and global awareness as India and China become more technically competitive.

I want to personally thank the Board members who came to campus to review senior design projects and work on curriculum improvements. Those who came are:

Bruce Carter	Judith Congdon	John Cross	Chuck Ennis
Pat Goodwin	Greg Henneke	Mickey Hines	Pat Martin
Sheila McKinley	David Myers	Steve Roetter	Renee Schwecke
Eric Smith	Jon Stolz	Roger Ward	David Warder

### **ASCE Banquet and Tribune Star Christmas Basket Fund**

The ASCE Winter Banquet was combined with our winter CE Board of Advisors meeting for the first time this year. Rather than an evening event, the banquet was at lunch with the Board of Advisors. This made it easier for a larger number of students to attend, and assured the students would be able to share the event with a larger group of professionals. Approximately 115 students and faculty were in attendance. After the meal, outgoing chapter president Michael Reeves led a short business meeting and presented each of the civil engineering faculty with gag gifts from the ASCE student chapter. Gifts of appreciation were also given to Kathy Nicoson, Department Secretary; Keith Royer, Department Technician; and Richard Mott, the custodian for our part of the building.

The banquet speaker was Ms. Renee Schwecke, a 1998 Rose alum. Renee's presentation was on "Marketing Yourself and Your Company as a Young Engineer." Renee is now a Project Engineer for HDR Engineering, Inc. in Phoenix, Arizona. Renee has been especially active in ASCE, serving as Treasurer for the Phoenix Branch Younger Members Forum, as Membership Chair for the Phoenix Branch, and as a corresponding member for the Committee on Younger Members and the Committee on Academic Prerequisites for Professional Practice.

As part of the meeting, the chapter then kicked off the annual Tribune Star Christmas Basket Fund Drive. This year, the chapter set a new record, raising \$3,743 from the Rose-Hulman community for the Tribune Star Christmas Basket Fund.

## 2005/2006 Hot Mix Asphalt Quality Assurance/Quality Control Program

This year marked the twenty first year of the Rose-Hulman Civil Engineering (RHIT)/Asphalt Pavement Association of Indiana (APAI)/Indiana Department of Transportation (INDOT) Hot Mix Asphalt Quality Assurance/Quality Control (HMA QA/QC) Certification Program for hot mix asphalt construction in the State of Indiana. The program came about through the diligent efforts of the former INDOT Chief Engineer- Donald W. Lucas, Rose CE, Class of 1959. All HMA contractors performing paving operations on state and federal highways in Indiana must have technical personnel certified through the RHIT-INDOT HMA QA/QC Certification Program. 45 contractors and material testing laboratory personnel took part in the Certification Program this past winter - either a week-long, laboratory session which were held on the RHIT campus or a multi-day recertification program. Since its inception in 1986, a total of 1977 people have enrolled in the HMA QA/QC Program. The program has been widely accepted by the Hot Mix Asphalt paving industry and will be repeated next year.

Program registrants this year include Civil engineering alumni (from left) Mark Fligor ('96), Daniel Conley ('05) and Tim Conarroe ('91) - shown examining Superpave gyratory specimens. Fligor is the INDOT Vincennes District testing engineer, while Conarroe is the INDOT Greenfield District testing engineer. Conley is an engineer for Wabash Valley Asphalt in Terre Haute.

The HMA QA/QC Program has also allowed us to develop long term relationships with INDOT, APAI, and various hot mix asphalt contractors. This has resulted in a number of students receiving summer internships with government and industry, as well as permanent employment opportunities for graduates. Additionally, APAI has annually sponsored scholarships for two or three of our students. Since 1998, twenty two students have receive financial assistance.



## ASCE Student Chapter News

The new student chapter officers started their terms in January. Once again we would like to recognize the new officers: Michael Krantz, president; Matthew Trowbridge, vice president; Aaron Knaack, secretary; and Justin Jent, treasurer. In late January, the officers and Dr. Sutterer traveled for Tampa to attend ASCE's Zone II Workshop for Student Chapter Leaders. The weekend was full of workshop activities, so despite the great weather, the team spent most of their time indoors. The students left the workshop with a lot of good ideas for continued chapter improvement, and also reassured that they are already doing a pretty good job.

Former president Michael Reeves and former Secretary Michael Krantz just finished assembly of the chapter's annual report to ASCE. As many of our alumni will attest, assembly of the effort is a monumental activity for a few officers every year, leading to an approximately 100 page report upon completion.

The chapter is maintaining a fast pace of winter activities. The chapter has held a winter cookout and several meetings. Planning for the student chapter regional conference, to be held in Madison, Wisconsin this year, is also under way. Finally, the service committee is busy planning the construction of a wheelchair ramp and design of a parking area for the Bird-Gibson Cross Country course nearby. The chapter is also planning a number of field trips and evaluating several other potential service projects.

## Senior Design Projects

The seniors are finishing up their designs as the winter quarter comes to a close. We have some great projects for our seniors to work on. Here is the list of projects and clients:

### **Wetlands & Wildlife Preserve**

*Terre Haute Chamber of Commerce*

Team: Josh Jacobs (Harrison, OH), Tim King (Indianapolis, IN),

Faculty Coach: Robinson

Marcus, Maurer (Brazil, IN), and Abigail Richards (Greenwood, IN)

Over 1000 acres of farmland just west of the Wabash River between I-70 and US 40 is in the Wabash River floodplain. Because of frequent flooding, the land is not very productive. This project explores the feasibility of restoring the marginal farmlands into riparian wetlands. The client would like to inundate some of the area to create a combination of deep water habitat, swamps and marshes. Key tasks include topographic mapping, renderings of developed trails and educational areas, hydrological study, design of hydraulic structures, and development of a phased implementation plan.

### **National Road Heritage Trail in Illinois**

*Clark County Trails Coalition*

Team: Josh Brittain (Ferdinand, IN), Courtney Davidson (Terre Haute, IN),

Faculty Coach: McKinney

Chris Dyer (Burlington, IN), Ben Henson (Petersburg, IN), and Pat Ludwig (Valparaiso, IN)

This project looks to extend the National Road Heritage Trail from the Illinois-Indiana border westward to Greenup in Cumberland County (38 mile section). The project will examine the broad right-of-way limits of the corridor to determine a proposed route, structural elements, and trailhead facilities. Key tasks include inventorying current ownership along the proposed trail, design of typical trail cross-sections, trail head site designs, structural design, foundation design, and development of a phased implementation plan.

### **Sustainable Country Estates**

*Paragon Construction, Inc.*

Team: Bryce Beckstrom (Wyoming, IL), Cole Marr (Jacksonville, IL),

Faculty Coach: Thomas

Mike Reeves (Avon, IN), and Amanda Sheehe (Princeton, IN)

Paragon is a residential construction company that would like to build energy efficient, low environmental impact homes in a 66-acre development in rural Hancock County, Indiana. The features of the development that need to be evaluated are alternative water supply systems, alternative wastewater treatment systems, energy efficient residential designs, renewable energy sources, green building techniques, multiuse community grounds, onsite stormwater treatment, and erosion control during construction.

### **Bridge Design**

*Crane Naval Surface Warfare Center*

Team: John Groff (Beaver, PA), Fred Lintz (Bloomfield, IN),

Faculty Coach: Aidoo

Lauren Oakley (Paoli, IN), Cassidy Sutton (Loogootee, IN), and Jake Vieck (Vincennes, IN)

A multi-span timber bridge with a span of 76 feet and a width of 24 feet has deteriorated to the point that it needs to be replaced. The replacement bridge should be selected based on economics, expected loading, constructability, and level of traffic safety provided. The client will hire a contractor to obtain a reasonable number of soil borings. Key tasks include documentation of existing conditions, updating of topographic map, hydrological study, structural design, foundation design, and development of an erosion control plan.

## Senior Design Projects (cont.)

### ***Mission Compound in Trinidad***

*Missions International*

Team: Jesse Houghtalen (Terre Haute, IN), Zach Johnson (Elkhart, IN),  
Matt Lovell (Brownsburg, IN), and Maria Van Houten (Port Charlotte, FL)

Faculty Coach: Sutterer

The client is a physician in Trinidad who has organized various mission trips throughout the Caribbean to build medical facilities. This project is to design a mission compound that has a free medical clinic, home for battered women, soup kitchen, and an orphanage. The team must be sensitive to cultural and economic constraints when developing the design. Key tasks include floor plans, site layout, structural design, foundation design, and alternative water and wastewater systems.

### ***New Airport Terminal***

*Walter P. Moore and Associates, Inc.*

Team: John Condon (Bend, OR), Nathaniel Linden (Vicenza, Italy),  
Jason Lindsey (Indianapolis, IN), Natalie Whiteman (Westport, IN), and Eric Wojak (Terre Haute, IN)

Faculty Coach: Hanson

For this project, the client is one of the nation's leading structural design firms. They are currently designing a new international terminal for the Las Vegas airport. They would like a team to investigate innovative structural systems and designs that can be incorporated in future long span building designs. The team will be provided with architectural drawings of a typical section of the terminal and soil test data. Key tasks include investigation of structural options, structural design and foundation design.

### ***Optimizing "Big Box" Construction***

*Portland Cement Association*

Team: Joe Garrott (Battle Ground, IN), Kevin Hanson (Laconia, IN),  
Josh Hogan (Terre Haute, IN), and Lauren Hughes (Clay City, IN)

Faculty Coach: Hanson

PCA is an organization that represents cement companies in the US and Canada and promotes use of concrete. Currently, several different structural systems can be cost effective for large, one-story structures ("big box") used for retail stores. PCA would like the team to design typical wall sections for several types of construction. The team will use those designs and information from interviews with practicing construction managers to develop a flow chart. The chart will allow designers and construction managers around the country to determine the most cost effective option for a particular construction site. Key tasks include structural design and construction management.

## Mark Your Calendar

May 20, 2006—ASCE Golf Tournament (Rea Park Golf Course)

May 27, 2006—Commencement

### KEEP IN TOUCH

We are always interested in how our alumni are doing. Let us know about you! Keep in touch by e-mailing us at [kathy.nicoson@rose-hulman.edu](mailto:kathy.nicoson@rose-hulman.edu) with your current contact information and what you are doing.

## Alumni Spotlight

**ADRIAN REID (1996)** has been named the City Engineer for the City of Bloomington, Indiana.

**MORGAN HAWKER (1999)** has finished her master's degree and is living full-time in Louisville, Kentucky. She is engaged to marry Robert Raque in September.

**CHAD LEINART (1999)** is working in his hometown of Seymour, Indiana for a small family owned excavation company. He and his wife have a daughter who will be a year old soon.

**SEAN STOUGHTON (1999)** recently passed the PE and is now registered in Wyoming. Congratulations Sean! He left Alaska the end of January and will be the lead site cost control engineer on a new project for De Beers in Toronto.

**BRYAN EGLI (2000)** has recently been promoted to Project Manager with the Midwest Plant Division of Reynolds, Inc. He also recently completed the requirements for national certification as a Safety Trained Supervisor (STS). CCHST (Council on Certification of Health; Environmental and Safety Technologists) awards this certification to individuals who meet the CCHST experience and education requirements, including passing a comprehensive written examination. The exam covered subjects such as, hazard recognition and analysis, personal protective equipment, regulatory compliance, and incident investigation.

**JENNIFER "KRAUSE" LAWRENCE (2002)** and her husband David announce the arrival of their second child, Evan David who was born on October 16, 2005. Evan is healthy as a horse and weighed in at 9 pounds 6 ounces. Jennifer reports that big sister Katie is being quite the mother hen for only being 2 years old. Congratulations to all of them!

**SHAD SCHOPPERT (2002)** recently came home from Iraq and wants to thank everyone for their support while he has been deployed. We are glad he made it home safe.

**MANDY "WAMPLER" STEWART (2002)** and her husband Don and big brother Evan want to announce the birth of their second child, a daughter, Melanie Kay "Lanie" Stewart born on November 10, 2005. Congratulations to the Stewart family!

**TABATHA "DOUGHTY" BRIONES (2004)** and her husband are expecting a baby the first part of June. Tabatha says their son Lyndon, is anxious to be a big brother.

**CORY HOWELL (2005)** after vacationing the whole month after graduation in Europe (England/Scotland/ Ireland/Italy/Austria/Switzerland/Germany), Montana and Wyoming , he decided to accept a position with Kimley-Horn's new Land Development University (LDU) program in Vero Beach, Florida.

**ANDREW TWAREK (2005)** reported to us that he and his girlfriend Aimee recently became engaged.