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In this issue:

- LDDI thanks its mentors (p. 1)
- LDDI graduate and advisory board member reflect on their recent experiences (p. 2)
- New developments, both stateside and abroad (p. 3)
- Virginia's first LEED platinum certified building and LDDI's new curriculum (p. 4)

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Summer's finally here and that finds the Virginia Tech campus a little quieter and the days a little longer. It's a chance for us to catch our breath after a spring semester that included a number of exciting happenings related to LDDI. Perhaps most notable is the Via Department of Civil & Environmental Engineering's adoption of a new undergraduate curriculum that recognizes land development design as a focus study area.

In other exciting Department news, I hope that you will join me in extending a warm welcome to our incoming Department Head, Dr. Sam Easterling. Dr. Easterling will take over for current Department Head Dr. Bill Knocke on Aug. 10. We thank Dr. Knocke for his excellent leadership and strong support of LDDI!

As we all know, the land development industry has been particularly hard hit by the recent economic downturn. During these tough times it's more important than ever for support of LDDI to remain strong. While the financial support of our sponsors is critically important, so is the time and energy that practitioners donate to mentor the next generation of engineers. I hope that reading this newsletter will inspire you to become actively involved in our efforts. As always, I welcome your feedback on how we can continue to build LDDI!

Dr. Randy Dymond, PE, VT LDDI Coordinator

Thank You to Mentors!

by Kevin Young

The spring 2009 offering of CEE 4274, Land Development Design, was the sixth semester that student groups were paired with professional engineers for their semester-long design projects. The involvement of practitioners as mentors supplements traditional classroom instruction by providing students with a real-world site design experience that is unique for each group. Mentors offer technical expertise and design advice for a particular site that they have worked on. "My CEE 4274 mentoring experience was eye-opening," explained Kevin Murray of Tri-Tek Engineering. "It required us to look at projects from a perspective we seldom have the opportunity to consider: now that it is built, how might it have been designed differently? Working with the students to explore this possibility was both challenging and rewarding. I look forward to the next opportunity."



Mentors gather following final student presentations

The CEE 4274 mentoring program is tremendously popular among students. Without industry professionals giving generously of their time and energy, this program would not be possible. We would like to thank the following mentors from the spring 2009 semester.

- Bryan Stevenson and Scott Cramer (AES Consulting Engineers)
- Mary Ann Bonadeo (Anderson & Associates, Inc.)
- Roy Waugh and Anthony Verdi (Bowman Consulting)
- Art Woods and John Gaston (Burgess & Niple)
- James Patteson (Fairfax County)
- Terry Suehr (PBS&J)
- Younes Belamqaddam (Patton Harris Rust & Associates)
- Kevin Murray and Brian Thomas (Tri-Tek Engineering)

If you are interested in becoming a mentor, please contact Randy Dymond (dymond@vt.edu) or Kevin Young (keyoung@vt.edu).

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LDDI Graduates in the Industry: Scott Cramer

AES Project Engineer

by Kelly Shayne Young

“LDDI events, courses, and showcases provide vast opportunities to make contacts and get information from industry professionals, and summer internships and co-ops are great ways to experience the profession before making a larger career commitment.” - Scott Cramer, AES Project Engineer

The transition from studying, going to class, and watching Hokie sports with friends to working in the real world may be a challenge for anyone, but it has been a welcome challenge for Virginia Tech master's graduate Scott Cramer. This transition was made easier by the understanding and experience Scott gained through his involvement with LDDI.

From the experienced civil engineering and land development professionals who volunteer their time and resources to teach and mentor students, to the growing curriculum of courses being offered, LDDI helped Scott understand the importance of teamwork and honed his proficiency in land development design. “I took the Land Development Design course as a senior, which allowed me to better understand how technical information from theory classes could be applied to a real project,” explains Scott. He also took the Advanced Land Development Design course in his first year

of graduate school, where he learned more in-depth principles and techniques for project design and was able to visit a number of project sites and to see design practices in use.

As a project engineer with AES Consulting Engineers, Scott has been involved with the design of a major residential subdivision of more than 150 3 to 5 acre lots. This project has included road design, grading, erosion and sediment control, and a large amount of stormwater management involving HEC-RAS modeling.

Although Scott is no longer a student, his desire to learn continues. “As with any profession,” he says, “a hard work ethic and desire to continue to learn in-depth skills, both technical and non-technical, are necessary.” He believes that CAD proficiency and an overall appreciation of how land development projects can impact and enhance a community are also essential to becoming a successful design engineer.



Who We Are: James Patteson, Fairfax County, Va.

Each issue of *LDDI Bridges* will focus on Advisory Board members who make LDDI happen.

James graduated from Virginia Tech in 1984 with a B.S. in Civil Engineering and is currently the Director of Land Development Services (LDS) for Fairfax County. LDS is responsible for regulating all land and building development projects within the commonwealth's most populous jurisdiction.

What is your specialty within the civil and environmental engineering field?

I enjoy the problem solving aspects of civil engineering and the challenge to create and maintain the infrastructure that supports the types of communities

What attracts you to civil and environmental engineering (CEE)?

I enjoy the problem solving aspects of civil engineering and the challenge to create and maintain the infrastructure that supports the types of communities in which we all want to live.

What are the highlights of your professional career?

I believe the highlights of my career are yet to come as a municipal engineer helping the rapidly urbanizing Fairfax County wrestle with the significant challenge of balancing

growth and economic development with protecting our environmental resources.

What motivated you to become involved with the LDDI?

Randy Dymond! You cannot say no to the guy! I also love reconnecting with Virginia Tech and being involved with the young and talented civil engineering students. It has been a very energizing experience.

What do you think are the strengths of this program?

The strength of the program is a combination of great leadership within the department provided by Randy and Kevin, the contributions, support, and mentorship provided by the land development practitioners, and most importantly the commitment and energy provided by the students who support the LDDI mission.

What are your hobbies/interests?

My main hobby is enjoying time with my three teenagers (sometimes a struggle). My oldest son will be studying engineering at Virginia Tech starting in the fall. Also, I ran track while at Tech, and while I'm not as fast, I still enjoy running.

“It truly takes the talents and contributions of many different stakeholders to develop successful communities and I enjoy being a constructive part of that process.” - James Patteson, Director of Land Development Services for Fairfax County, Va.

Burgess & Niple Helps Deliver New Corporate Center

edited by Kelly Shayne Young

Burgess & Niple (B&N) is providing planning and design services for Commonwealth Centre at Westfields, a 101-acre commercial development consisting of three office buildings, two hotels, and three retail buildings. Additional site features include two stormwater management ponds, two amenity ponds, and a bioretention pond. B&N has been lending its multidisciplinary engineering expertise to the development while incorporating low-impact design practices, adhering to Leadership in Energy and Environmental Design (LEED) requirements, and providing more than 50 percent of open space on the site.

The firm provided site design for Commonwealth Centre's water system, sanitary sewer, storm drainage, utilities, superelevated loop roadways, and two intersections. B&N also completed an adequate outfall analysis.

"Commonwealth Centre has become a

focal point within Westfields Corporate Center," explains John Gaston, PE, the project manager, "and not simply because of its size or location." Located just three miles from Washington Dulles International Airport and approximately 25 miles from Washington, D.C., Commonwealth Centre will serve businesses as well as local residents and visitors with office space, restaurants and retail establishments.

With its strategic location and excellent amenities, Westfields Corporate Center is one of the most prominent corporate business parks in the Washington, D.C. area. B&N has worked on this 1,100-acre business park since its inception and received an Exceptional Design Award from Fairfax County for the roadway network, landscaping, and amenity features. B&N has worked on dozens of separate development projects within the office park for the last 20 years.



With a prime location and excellent visibility, Commonwealth Centre will soon become a premier corporate destination in the region.

AES Heads for the Caribbean

edited by Kelly Shayne Young

AES Consulting Engineers (AES) has overcome considerable distance and design challenges to provide site and utility plans for Pond Bay, FOLIO Collection's new private residence club on the island of St. John in the U.S. Virgin Islands. The resort is set on 15 acres of beachfront property overlooking the Caribbean and borders a serene pond on the southwest coast of the island. The project consists of 29 fractional ownership units, an arrival building, an administration building, the 100-plus seat Pond Bay House Restaurant, a clubhouse, a pool, a fitness center, and a world class ESPA spa.

The main goal of this project is to design a modern and tranquil resort setting while providing access to, and the protection of, the surrounding natural environment, which includes tropical vegetation, salt marshes, the ocean, salt ponds, and a coral reef. As the developer realized the potential of this project, AES performed a number of redesigns to increase the quality of the

development, to further blend the resort with its natural setting and to increase the quality of leisure for the resort's guests and owners.

To ensure the protection of St. John's natural features, AES employed its extensive design expertise in environment protection developed through many years of adhering to the Chesapeake Bay Act. The environmentally sensitive and innovative design techniques utilized by AES include stilling bays to create level spreading of stormwater discharge, offsite parking where guest arrivals trade automobiles for golf carts, and pervious parking lots and walking paths.

Scheduled to open in late 2009, the Pond Bay resort will not only create jobs for local residents, it will also further elevate the perception of St. John as a premier leisure location and improve access to one of St. John's most beautiful, natural settings.



With an ideal location, surrounding cliffs, direct access to the Caribbean, and access to salt ponds, the Pond Bay resort is sure to be one of the Caribbean's finest resorts.

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LDDI Bridges June 2009

Draper Aden Brings First LEED Platinum Building to Va.

edited by Kelly Shayne Young

The Inger and Walter Rice Center for Environmental Life Sciences at Virginia Commonwealth University (VCU) is a research and teaching facility focused on environmental research and education. Draper Aden Associates provided civil engineering design, surveying, environmental, and construction administration services for the VCU Rice Center.

The project, located on 473 acres of environmentally sensitive land on the James River, is one of the finest examples of sustainable design and was the first project in Virginia to receive a LEED Platinum certification. LEED – the Leadership in Energy and Environmental Design Green Building Rating System – is the nationally accepted benchmark for optimal energy and environmental design and construction.

Services included survey, wetlands delineation, Environmental Impact Report (EIR), site design and permitting, and geotechnical engineering for the 6,000 square-foot main building and small open pavilion, approximately one mile of access

road, access improvements from the State road, well-based water supply system, septic disposal system, boathouse and pier, grading, and drainage.

The permitting process for the project was challenging due to the innovative sustainable features that were not familiar to review agencies, including the rainwater reuse system and the integrated stormwater management system. Draper Aden Associates provided construction administration services, including geotechnical inspections, through the duration of construction.



Located on the James River, VCU's Rice Center is the first of its kind in Virginia.

New CEE Curriculum Includes Land Development Design

by Kevin Young

In April, the faculty of the Via Department of Civil & Environmental Engineering voted to adopt a new curriculum structure for students pursuing a bachelor's degree in CEE. The development of a new undergraduate curriculum is no small task as it must satisfy a multitude of requirements including those imposed by the University, the College of Engineering, and the Accreditation Board for Engineering and Technology (ABET).

The proposed curriculum structure will abandon the current system, which requires students to select their courses based on one of four "tracks." The current curriculum grants students very little flexibility with regards to course selection, as each track is rigidly defined. Throughout development of the new curriculum, faculty sought to provide students with greater freedom while continuing to expose them to a breadth of traditional civil and environmental engineering topics.

The new curriculum structure is comprised of eight "Specialty Areas" – Construction, Environmental, Geotechnical, Land Development, Materials, Structures, Transportation, and Water Resources. The inclusion of Land Development among these specialty areas speaks to LDDI's success in improving awareness of land development design as a vital area of study within civil and environmental engineering. "It is quite an accomplishment of LDDI and the Curriculum and Course Enhancement Committee (CCEC) to get Land Development Design offered in this new curriculum," said Cameron Palmore, Chair of the CCEC. "Not only does the CEE department now offer more classes than other universities in Land Development Design, it is the first to have a complete study area available for the students."

The new curriculum will first affect students graduating in calendar year 2012.