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*Greetings from Virginia Tech! I hope this message finds you happy, healthy, and well following the holiday season, and that you and your family are looking forward to a prosperous and rewarding 2010. We are just weeks away from the beginning of the spring semester, and those of us involved with LDDI can hardly wait! Perhaps the most notable reason for our excitement is the offering of a brand new, three credit course titled "Municipal Engineering."*

*On January 8<sup>th</sup>, LDDI will hold its annual winter meeting in Richmond for the second straight year. Among numerous other topics, the meeting will reveal LDDI's recently revised strategic plan and solicit input from LDDI's General Membership on how to achieve the plan's goals and objectives. I sincerely hope that you are able to join us in Richmond for the meeting.*

*This issue of the Bridges newsletter features stories on the new three credit junior-level land development course, student club activities, project showcases from some of our sponsoring firms, and spotlights on special people who help to make LDDI a success.*

*I hope you enjoy reading our newsletter and, as always, please let me know how we can continue to improve and make it better.*

*Best wishes for a wonderful year!*

*Dr. Randy Dymond, PE, VT LDDI Coordinator*

## Three-Credit Junior-Level Course Makes its Debut

*by Kelly Shayne Young*

During the fall 2009 semester, a three-credit, junior-level course titled "Introduction to Land Development Design" (CEE 3274) was offered to Virginia Tech CEE majors for the first time. The course, an expansion of a one-credit seminar offered during the spring 2008 semester, is the product of over two years of work by LDDI's Curriculum and Course Enhancement Committee. The Committee's primary objectives in creating the course were to expand the overall land development design curriculum and to better prepare students for success in the senior-level, ABET-accredited "Land Development Design" course (CEE 4274). Beginning in the spring 2011 semester, CEE 3274 will become a prerequisite for CEE 4274.

The initial course was taught by Kevin Young, PE. When asked for his impression of the course Young responded, "It was a real pleasure to teach Intro. to Land Development Design for the first time and to develop the various lectures, learning materials, and assignments. Student feedback on the course was very positive, and I was particularly flattered by comments from a senior in the class who graduated this December with an emphasis in Structural Engineering. The student acknowledged that he really had no idea what land development entailed prior to taking the course but that he was now searching for a way to integrate his structural background with a career in land development design."

Fifteen students signed up for the first offering of CEE 3274. In April of 2009, 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 Civil & Environmental Engineering at Virginia Tech. This new curriculum will first affect students graduating in calendar year 2012. Within the framework of the new curriculum, Introduction to Land Development Design will be offered in both the fall and spring semesters and Department curriculum advisors anticipate an enrollment of more than 50 students per semester.

Financial support for Introduction to Land Development came exclusively from private donations and corporate sponsorship of LDDI.

### LDDI Bridges

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*“To be successful, an engineer needs great intrapersonal skills. We work with a lot of different people with significantly different skill sets, and the ability to communicate and solve problems with these partners is invaluable.” - Sara Green, Kimley-Horn Analyst*

## LDDI Graduates in the Industry: Sara Green

*Kimley-Horn Civil Engineering Analyst*

*by Kelly Shayne Young*

From chilly mountains to sun and sand, Sara Green left Blacksburg in 2008 after completing her B.S. in Civil and Environmental Engineering from Virginia Tech to join the ranks of Kimley-Horn and Associates, Inc. in Vero Beach, Florida.

During her time at Virginia Tech, Sara took advantage of the opportunities created by the Land Development Design Initiative (LDDI). “LDDI provides a meaningful connection between students and the industry, and offers students insight into the many aspects of land development,” explains Green. “The Land Development Design and Advanced Land Development courses helped to develop my technical skills, gave me insight into the many facets of the land development process, and provided the avenue through which I met many of the coworkers and project managers I work with today.”

While at Kimley-Horn, Sara has worked on several big-box retailer sites and commercial developments, preparing site plans; paving, grading and drainage plans; the SWPPP plan; and the phasing plan; as well as coordinating offsite improvements. “In addition, I was part of a team that provided creative cost-saving services for a large national retailer,” she says. “The experience helped me to establish great relationships with various city officials and agencies across the country. It was a great opportunity to see the direct impact we can have on our clients when providing exceptional service.”

Although she misses the Hokie atmosphere and spirit, Sara enjoys beach volleyball, camping, coaching little league softball, and youth guidance mentoring, and still manages to find time for her painting and gardening.



*“After graduation, students will find that there may not always be an ideal position waiting for them, but each position holds the potential to be a great one. If graduates face their new careers with an open mind, a willingness to learn, and an eagerness to succeed, they will accomplish great things.” - Ginger Greunke, Recruiting Manager for Bohler Engineering*

## Who We Are: Ginger Greunke, Bohler Engineering

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

*Ginger is currently the recruiting manager for Bohler Engineering’s Mid-Atlantic region and serves on LDDI’s advisory board and website committee.*

### **What is your specialty within the civil engineering field?**

As Bohler’s recruiting manager, I search for the most qualified professionals to fulfill our company’s needs. I have found that colleges and universities, particularly schools with stellar engineering programs such as Virginia Tech, are the best places to find skilled engineers to groom.

### **What attracts you to land development and your role within the industry?**

Just as LDDI strives to couple eager engineering students with accomplished professionals within the industry, I also enjoy helping new graduates find a nurturing environment in Bohler where they can learn from the industry’s best while working alongside highly experienced and licensed professionals.

### **Please mention the highlights of your academic/professional career?**

My career has afforded me countless opportunities to meet and recruit some of the

brightest young minds in the industry.

### **What motivated you to become involved with LDDI?**

I became involved with LDDI three and a half years ago when I began my employment with Bohler. Because of the firm’s interest in enhancing awareness of land development within the civil engineering industry, Bohler’s support of LDDI’s mission was inherent.

### **What do you think are the strengths of this program?**

The greatest strength of the program is the dedication shown by the faculty, practitioners, and students. It is incredibly rare to find all three groups working toward a common goal.

### **What are your hobbies/interests?**

When I am not working, my main interest is my family. My husband and I have two children; our daughter Taylor just turned four years old on Christmas Eve, and our son Evan is two and a half. Last summer, Evan accompanied me on a trip to Charlotte, where he got to watch me drive a race car at Lowe’s Motor Speedway.

## Fairfax County Community Receives Needed Makeover

*edited by Kelly Shayne Young*

Located only seven miles from Washington, DC and less than one mile from the Huntington Metro Station and I-495 interchange, Huntington Reserve is KB Home's newest community in Metro DC. Jansen Land Consulting (JLC) is overseeing the land development of Section 1 and is managing the final engineering plan approval and ultimate land development for Section 2 of the 85-lot townhome community.

This project has encompassed numerous disciplines of civil engineering. Transportation engineers were consulted to design the street tie ins and evaluate the possibility of traffic signals to Huntington Avenue, structural engineers were consulted to design numerous retaining walls on the site, and water resource engineers were consulted to perform the hydrologic and hydraulic flood plain analysis. Additionally, geotechnical engineers were consulted to design the foundations for streets and buildings due to expansive clay on the site. They identified the need for and designed slope stability piers to enable large fills to be placed on

this expansive clay. Utilizing this construction method to deal with expansive clay soil demonstrates a unique civil engineering solution in making the maximum use out of the entire property for the benefit of a well designed community.

The biggest challenge for the engineers was to constantly account and design for an ever changing floodplain elevation. "This area of Fairfax County has experienced extreme flooding over the past several years," explains Bob Jansen, JLC President. "The site was designed to an original floodplain elevation but that elevation has been adjusted several times by the State and local jurisdictions. The engineer has had to adjust the design to account for each new floodplain elevation, always ensuring that the lowest floor elevation of the homes was above this elevation.

A quintessential redevelopment project, this development will replace an old single-family neighborhood, which had been neglected, and will raise property values in the entire community.



*83 of the 85 homes in Huntington Reserve will be sold to the public, and two of the homes will be offered as affordable housing through Fairfax County's Affordable Housing Program.*

## A&A Brings First & Main Development to Life

*edited by Kelly Shayne Young*

An area of Blacksburg, Va. that used to be considered an eyesore now boasts Fairmount Properties' First & Main, a pedestrian-friendly retail center with a variety of stores and restaurants. Anderson & Associates, Inc. (A&A) served as engineer for the development.

Among the many services provided by A&A were surveying, traffic impact analysis, roadway improvements, site layout, grading, stormwater collection and management design, utilities design, and erosion and sediment control. Stormwater management was particularly challenging because of a large off-site drainage area passing through the site and an existing pond that provided a regional detention function that had to be replicated. Space constraints (parking requirements) led to providing an underground stormwater detention solution.

While the developer was constantly changing the site plan to accommodate the changing needs of potential tenants, A&A personnel were trying to adhere to a fast-track schedule and prepare a final design. Keeping up with these changes and incorporating them into the design was a challenge. There were also various political and legal issues related to the emergence of a big-box retailer on the site. As the engineer of record for the project, A&A strived to steer clear of the political discussion while providing impartial professional services to the client that also met the technical requirements of the Town.

Through both economic hardships and political debates, First & Main has become a positive addition to the Blacksburg landscape and has been hailed as a success by the majority of both retailers and residents.



*As shown in these before and after pictures, the First & Main complex has brought a new level of retail opportunities to Blacksburg visitors and residents.*

## Virginia Tech

The Via Department of  
Civil and  
Environmental  
Engineering

### Thank you to our sponsors!

The sponsorships of our business partners are an essential component to the success of LDDI. We thank the following firms for their generous support:

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*Solutions Inc.*

## LDDI Bridges January 2010

### Student Club Helps the Local Community

by Kelly Shayne Young

On the first day of fall semester exams, members of LDDI's Sustainable Land Development Student Club took time out of their busy schedules to volunteer at the Montgomery County Christmas Store ([www.mcchristmasstore.org](http://www.mcchristmasstore.org)). Operators of the Store describe it as, "an all-volunteer, community-wide, nonprofit organization which assists low-income families in Montgomery County during the Christmas season by providing a shopping experience characterized by choice and dignity." This marks the second year in a row that the Club has found time during exam week to volunteer at the Store.

As part of LDDI's recently adopted strategic plan, Club advisor Kevin Young is working with the students to explore other community service opportunities. The eventual goal is to participate in a community service effort that utilizes and strengthens the students' civil engineering skills. If you have service project ideas that you would like to share with the Club, or if you would like to offer your support in another way you are encouraged to contact club president Mallory Barkdull at [mbarkdu@vt.edu](mailto:mbarkdu@vt.edu).



*Pictured from left to right: Stephen Litsas, Mallory Barkdull, Joshua Combs, and Dr. Randy Dymond*



*Pictured from left to right: Kevin Young, Z. Nathan Bales, Kyle White, and Claire McKenzie*

### LDDI Thanks its Individual Donors

by Kevin Young

Prior to the formation of LDDI in 2006, students at Virginia Tech had only one land development course offering available to them. Through the efforts of LDDI, the 2009-2010 academic year is providing students with seven land development course offerings. These include Land Development Design (two sections), Advanced Land Development Design, Introduction to Land Development Design, Sustainable Land Development, Municipal Engineering, and Geotechnics for Land Development.

Of these seven course offerings, only three are financially supported by Virginia Tech. Along with funds raised through LDDI's corporate sponsorship program, individual donations make this expanded curriculum possible. At this time, LDDI would like to recognize the generous private donations which have been made by the following individuals:

- Mr. Julian Bell (Bell Development Company)
- Mr. Gary Bowman (Bowman Consulting)
- Mr. Tyson Catlett (Anderson & Associates)
- Mr. Derrick Cave (Kimley-Horn and Associates)
- Mr. Mark Huffman (Blackwood Development Company)
- Mr. Bob Jansen (Jansen Land Consulting)
- Mr. Paul Johnson (Charles P. Johnson & Associates)
- Mr. Bryan Stevenson (Vanasse Hangen Brustlin)

Without the continued financial support of LDDI's corporate sponsors and private donors, it will be impossible to maintain the expanded land development curriculum at Virginia Tech. If you are interested in learning about the benefits associated with individual sponsorship of LDDI, we invite you to visit our website at [http://lddi.net/pdf/Sponsorships\\_Individuals.pdf](http://lddi.net/pdf/Sponsorships_Individuals.pdf).