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LDDI Bridges

is a publication of
Virginia Tech's
*Land Development
Design Initiative*

Editors:

Kelly Shayne Young
ksyoung@vt.edu

Kevin Young
keyoung@vt.edu

*Land Development Design Initiative • www.lddi.cee.vt.edu • Blacksburg, VA
Phone: (540) 231-9023 • Fax: (540) 231-7532 • E-mail: dymond@vt.edu*



Warm greetings from a cold Virginia Tech campus! I hope this message finds you and your organization doing well and looking forward to a healthy and prosperous 2011. The spring semester just kicked off and those of us involved with LDDI are excited to engage with a new crop of students. This semester, three LDDI courses are being offered with a combined enrollment of more than 180 students! I am teaching the junior-level Introduction to Land Development Design course. LDDI Assistant Coordinator Kevin Young is teaching the senior-level Land Development Design course. Three teams of practitioners from Balzer and Associates, Draper Aden Associates, and Kimley-Horn and Associates are teaching our Advanced Land Development Design course. Outside of the classroom, the Sustainable Land Development Club has a number of exciting social and educational activities planned for the spring.

On January 7th, the LDDI Advisory Board convened in Richmond for its quarterly meeting. The focus of this meeting was to review LDDI's strategic plan and to identify the steps needed to achieve future goals for the program. Board members left the meeting energized and with lots of ideas for continuing to grow and improve the land development design curriculum at Virginia Tech.

I hope you enjoy reading this newsletter and that it helps to keep you informed about the LDDI program. We are proud of our achievements to date, and recognize that these achievements are a direct result of the selfless giving of our general membership and of our individual donors and corporate sponsors. As LDDI enters its fifth year of existence, I wish to thank all of those who have contributed to our success. Best wishes for a fantastic 2011!

Dr. Randy Dymond, PE, VT LDDI Coordinator

Ways to Get Involved

by Kevin Young

Since its humble beginnings LDDI has depended heavily on the volunteer efforts of its general membership to achieve program goals. The past five years have seen LDDI grow to become a nationally recognized leader in undergraduate land development design education. Despite the program's rapid growth, LDDI continues to embrace an organic, grass roots operational model. This model relies on the participation of industry professionals who sincerely believe in LDDI's mission. I encourage you to contact one of LDDI's Committee Chairs to find out how you can get involved.

LDDI's Course and Curriculum Enhancement Committee focuses on developing the land development design curriculum, individual coursework, and other student help materials. The committee's primary objective is to prepare students for a career in the land development design profession. Contact Cameron Palmore (cpalmore@balzer.cc).

LDDI's Practitioner Involvement Committee focuses on developing a strong and sustainable relationship between all sectors of the land development profession and students at Virginia Tech. This involvement includes student mentoring, providing networking opportunities, and support for the Sustainable Land Development Club. Contact Jeff Lighthiser (jlighthiser@daa.com).

The major objectives of LDDI's Outreach Committee are: 1) to promote the field of land development engineering to students; and 2) to promote the Land Development Design Initiative to land development professionals and encourage their participation and support of the program. Contact Ginger Greunke (ggreunke@bohlereng.com).

To find out more about LDDI's three committees, please visit our website at <http://www.lddi.cee.vt.edu/>.



“Effective communication with clients, contractors, municipalities, and co-workers is vital to becoming a successful land development engineer.” - Erin Burdick, Kimley-Horn Engineering Analyst

LDDI Graduates in the Industry: Erin Burdick *Kimley-Horn and Associates, Inc. Engineering Analyst*

by Kelly Shayne Young

After earning her bachelor's degree in May 2010, Erin Burdick was able to put the skills and knowledge gained during her time at Virginia Tech to work at Kimley-Horn and Associates, Inc.'s Chesapeake, Va. office.

During her time at Virginia Tech, Erin took advantage of the many opportunities created by the Land Development Design Initiative (LDDI) and learned intricate details about the industry through the Municipal Engineering, Sustainable Land Development, and Land Development Design courses. “The LDDI courses introduced me to different concepts, and I am now using skills I learned in those courses, from hydrology to meeting deadlines,” explains Erin. “The Land Development Design course was the most beneficial because it showed me projects and examples of real world issues that I have come across since leaving college.”

LDDI's practitioner involvement, design classes, and strong professors and teaching assistants helped Erin prepare for her

transition from learning to practicing engineering. “Students who become involved in LDDI learn skills and tricks from real world engineers that they wouldn't learn in a classroom,” says Erin, “and design classes show the students projects and examples of real world issues that they will come across once they leave college.”

Since joining Kimley-Horn as an engineering analyst, Erin has worked on the grading and storm water design for a military housing project at Camp Lejeune in North Carolina and is gaining experience in construction administration and working through issues that arise in the field. She is also learning the importance of flexibility from a city park project involving a client's changing desires and political concerns.

Although she misses the Virginia Tech dining halls and flexible schedules, Erin enjoys dancing and is currently training for a half marathon. She also visited Europe after graduation and is hoping for a return visit.



“LDDI does an excellent job of exposing students to the practical applications of civil engineering to better prepare students for internships and entry level jobs.” - Claire McKenzie, Virginia Tech Graduate Student and LDDI Advisory Board Member

Who We Are: Claire McKenzie— Graduate Student

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

A third-generation Hokie, Claire graduated last May summa cum laude and valedictorian of the civil engineering class. She will receive her master of science in civil engineering in December 2011 and serves as the Advisory Board's first and only student member.

What is your planned specialty within the civil engineering field?

I specialized in land development for my undergraduate degree. My master's degree is more focused on water resources, but I am hoping to do some research in the sustainable land development field.

What attracts you to land development?

I like that I have the ability to design something on paper and later, see the design in real life. I enjoy land development because it combines all aspects of Civil Engineering into one project, and, often times, becomes a puzzle trying to put together all the pieces.

Please mention the highlights of your academic career?

I have been fortunate to be both an undergraduate and masters Via Scholar. I am now serving as the GTA for both the Intro to Land Development and Land Development

Design courses, which has allowed me to see the class from a teaching role and to continue to learn more about this dynamic field.

What motivated you to become involved with LDDI?

I realized what a unique opportunity it would be to get more involved with a one-of-kind program like LDDI. I have enjoyed helping to develop courses and course materials that, in some cases, were not available to me as I came through the program.

What do you think are the strengths of this program?

The strength of this program is the practitioner involvement and support. I have enjoyed not only meeting professionals from many firms and organizations, but also watching them work together for the benefit of the program.

What are your hobbies/interests?

I have been heavily involved with Virginia Tech's Relay For Life the last few years serving as the fundraising chair and now “Relay Mom” for the nation's largest collegiate Relay.

New State Police Driver Training Facility Comes to Fort Pickett

edited by Kelly Shayne Young

Located on the Virginia Department of State Police (VDSP) Fort Pickett campus, the new Virginia State Police Driver Training Facility will serve state and local public safety agencies in the Commonwealth. Dewberry is providing planning, environmental engineering, and architectural services for the complex.

The project will include a three-story, 48,000-square-foot administration and classroom building, a 120-person dormitory, a cafeteria, driver simulation rooms, an observation tower, and a vehicle maintenance garage that will house four bays for the care and repair of the VDSP fleet. The proposed facility will enroll and provide extended housing and dining for up to 120 cadets at a time.

The design includes a three-mile highway response course consisting of four-lane divided roadways, two-lane secondary roads, an on/off ramp, a simulated bridge surface, and a loop, as well as outer and inner tracks with off-road recovery areas that allow multiple vehicles to use the course at any given time. Also included are a ½-mile off-road response course, a 37-acre urban response course intended to simulate different aspects of an urban environment, and a skill response course.

Slated for completion in late 2012/early 2013, the new facility will be the first academic building located at the site and will enable the VDSP to train new recruits both on the track and in the classroom.



Dewberry will complete the design of a new state police driver training facility in the spring of 2011.

Gaithersburg to Welcome New Mixed-Use Community

edited by Kelly Shayne Young

With 180 acres of residential and mixed-use development, Crown Farm is sure to become one of Gaithersburg, Maryland's premier communities. As a consultant to the project owner, Jansen Land Consulting is working to obtain approvals on all site and engineering plans quickly and in a cost-effective manner; this includes utilizing value engineering measures whenever possible. The firm is also managing the ongoing site development of the project.

Crown Farm will provide a wide range of housing, from low-income to affordable to luxury, and is slated for a future state-of-the-art high school. The development will likely include a grocery store and much-needed retail services and will be transportation-friendly so as to not create an adverse impact on the traffic in the surrounding areas. Prospective residents will find an historic house and log cabin on the property, which will be preserved, restored, and offered for sale as a private residence.

Crown Farm, a neo-traditional community of units that face the streets and

are fed by rear alleys, has several transportation-related components, including a shuttle bus running to the nearby Metro station and a stop for the proposed Corridor City Transit light rail system within the community. The project will include substantial off-site road improvements that are designed to offset the traffic generated by the development and is proposed to be LEED-ND certified.

Project engineers, working together with Jansen Land Consulting, have been challenged to design the project in a way that yields a sufficient number of residential lots and retail space to make the project financially feasible, given the initial cost of the property, various engineering considerations, and the requirements for open space, reforestation, and stormwater management facilities on the property.

Site work on two of the planned six phases, or "neighborhoods," is scheduled to begin in late 2011/early 2012, with other phases to follow at a future date.



Crown Farm, located in Gaithersburg, Md., will offer its residents and visitors a wide range of housing and retail services.

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New Material Introduced to LDDI Curriculum

by Kevin Young

In many ways CEE 4274, Land Development Design, can be viewed as LDDI's "keystone" course. The senior-level course has for many years been recognized as an ABET accredited "design course," one of which must be taken by each student pursuing a B.S. in Civil & Environmental Engineering (CEE) at Virginia Tech. Beginning in the fall 2006 semester, and facilitated through LDDI, students taking the course have been paired with a professional engineer who serves as their mentor throughout the entirety of a semester long design project. The course offering is tremendously popular among students, and typically sees an enrollment of about 35 students per semester.

It has long been a goal of LDDI to expand the content of CEE 4274 beyond just technical engineering material to also include topics such as yield analysis, cost estimating, economic feasibility, and value engineering. However, as students who have taken CEE 4274 will attest, the course moves at a breakneck pace and carries a very heavy workload. Consequently, LDDI's Course and Curriculum Enhancement Committee (CCEC) felt that it would be impractical to attempt to introduce new material into a course that was already so full.

In the fall 2010 semester, a junior-level course titled Introduction to Land Development Design (CEE 3274) was put into full production as part of a new CEE curriculum at Virginia Tech. Beginning this spring, this introductory course became a prerequisite for students wishing to enroll in CEE 4274. With many of the more basic land development topics now covered in CEE 3274, the CCEC has been able to modify the structure of CEE 4274 to introduce some of the previously mentioned new material.

Maintaining one of LDDI's central themes, practitioners have been heavily involved in the restructuring of CEE 4274. Below is a listing of new topics to be included in the spring 2011 offering of CEE 4274, along with the practitioner volunteers most active in developing the associated course material. LDDI wishes to thank these individuals for their time and talent, and for continuing to make Virginia Tech the industry leader in land development design education.

- Pro forma and yield analysis – Mark Huffman (Blackwood Development)
- Quantity takeoff and cost estimating – Cameron Palmore (Balzer and Associates)
- Value engineering – Ron Garrett (VDOT) and Ron Kirkpatrick (Fairfax County)
- Erosion & Sediment Control – Mary Ann Bonadeo (Anderson & Associates), Matthew James (Draper Aden Associates), and Dan Rapella (Virginia DCR)

The CCEC is also beginning to look at the ways in which the new curriculum structure provides opportunities to expand upon the material covered in CEE 4284, Advanced Land Development Design. Topics currently being considered for inclusion in CEE 4284 include BMP/LID approaches to stormwater management and legislative issues impacting the land development industry. If you would like to become involved with the CCEC, you are encouraged to contact Committee Chair Cameron Palmore (cpalmore@balzer.cc).



Mentors visit CEE 4274 to introduce students to their semester design project.