



LDDI Bridges

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Civil and
Environmental
Engineering



Thanksgiving greetings from LDDI and Virginia Tech! I hope this message finds you and your family looking forward to the start of a wonderful holiday season. Most of the foliage that makes the Virginia Tech campus so breathtakingly beautiful in autumn has fallen, and we're now in the final sprint to the finish line of the semester. As you are reading this newsletter, nearly 200 students are currently enrolled in LDDI courses! Outside of the classroom, the Sustainable Land Development Club (SLDC) has enjoyed an active semester comprised of numerous guest speakers, an on-campus product exhibition, and various philanthropic and fundraising activities. In October, the LDDI Advisory Board convened on campus for its annual fall meeting, where the group discussed strategic planning, reviewed program finances, and discussed events for the spring semester. No doubt the fall '19 semester has kept us busy, but as always it has been immensely rewarding to contribute to and witness the growth and development of our students.

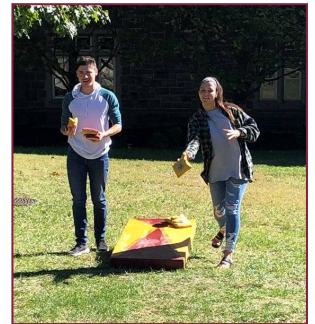
This newsletter provides a glimpse into some of the fall semester activities on campus, as well as a look ahead to the spring semester offering of our Municipal Engineering course. It also includes feature articles to help you learn more about the people and firms that make the LDDI program possible. As always, I welcome your feedback on how we can continually improve upon our efforts to maintain Virginia Tech as the national leader in undergraduate land development design education.

Dr. Randy Dymond, PE, VT LDDI Coordinator

SLDC Philanthropy

by Kelly Shayne Young

The Sustainable Land Development Club (SLDC) has a long history of fundraising and philanthropy, and in recent years has contributed to several local food banks, Hurricane Maria relief efforts, and other worthy causes. Having witnessed these efforts steadily grow in scope and impact over the years, early this semester SLDC Faculty Advisor and Assistant LDDI Coordinator Kevin Young tasked SLDC members with raising the bar even higher. The students did not disappoint, and arranged two "percentage nights" at local restaurants, and for the third year in a row held a fundraiser cornhole tournament. This year's tournament also featured a raffle of gifts donated by local vendors. Senior Lauren Buellesbach has taken a lead role in SLDC philanthropic efforts over the past two years and commented, "I have loved being a member of the SLDC because it has given me the opportunity to learn more about the land development industry as well as give back to the community. This semester I helped organize our annual cornhole tournament with a raffle to raise money for the Interfaith Food Pantry. The SLDC provided me with the opportunity to give back to the community while surrounding myself with other motivated students!" The fundraising efforts of SLDC students this fall enabled a \$300 contribution to the Micah's Backpack Program to provide food to public school students at high risk of food insecurity, a \$200 donation to the Blacksburg Interfaith Food Pantry, and a \$200 contribution to *Save the Children* for Bahamian hurricane relief.



Seniors Tim Gochnour and Allie Zuras pitch a game of cornhole at the fall 2019 SLDC fundraiser.

LDDI Advisory Board Life Member, Bob Jansen, comments, "I am overwhelmed by the efforts of SLDC students to support these much needed, and worthy programs. I dare say not many student clubs on campus invest this amount of time and energy to assist those less fortunate. I couldn't be more proud of these students for embracing Virginia Tech's motto of Ut Prosim - That I May Serve."

AES Aids in York County Kelton Station Development

edited by Kelly Shayne Young



Kelton Station includes 22 acres of mixed-use development, including residential and commercial properties.

AES provided surveying and civil site design services for Kelton Station, a mixed-use development currently under construction on a 22-acre parcel in York County, VA. The plan includes 12 buildings, 204 apartments, 32 townhouses, a 5,000 SF clubhouse, a pool, 20,000 SF of commercial space, and a 7,000 SF restaurant. Above the commercial space, 12 flats are planned. Once completed, Kelton Station will provide new options in commercial, office, and residential services to area residents and visitors.

Construction for the development will occur in three phases. Phase I, currently under construction, consists of the apartment buildings, a clubhouse, a pool, and a sanitary pump station. Phase II will include the townhouses. Phase III will involve the commercial development.

The site is bordered by Lightfoot Road, Old Mooretown Road, and Route 199. An entrance to Lightfoot Road will include turn lane additions and tapers as required per VDOT Road Design requirements. Based on

proffer conditions, the site plan includes a 5 foot wide concrete pedestrian walkway to the neighboring Lightfoot Crossing shopping area, an added amenity for future residents. A total of 455 parking spaces will serve the residential units.

A gravity sewer system was designed to service the townhomes. This sewer system will outfall to a pump station that will be constructed as part of the apartment phase. The AES design also includes an on-site submersible pump station with duplex pumps. A pump control building consisting of a single room to house the pump controls was provided with the plan. The 1,200 LF force main will traverse along Olde Mooretown Road to Lightfoot Road and connect to the pump station.

Stormwater management was a challenging aspect of this site design. Existing elevations, discharge requirements, and the client's preference to minimize wet pond BMPs led to the design team utilizing underground storage facilities.

Kimley-Horn Provides Solar Expertise

edited by Kelly Shayne Young



To date, Kimley-Horn has completed more than 600 solar development projects across the US.

Solar is a growing national practice for Kimley-Horn, and to date the firm has completed more than 600 solar projects across the country totaling over 30 gigawatts (approximately 300,000 acres of development). The Southeast has seen exceptional growth in solar development over the last decade, and Kimley-Horn has worked on 99 projects across 40 counties in Virginia and 56 projects across 28 counties in North Carolina. Their clients include public and private land owners, developers, contractors, and consultant partners in the market. The services they provide range from project inception to construction, allowing them to partner with their clients seamlessly at any phase of the project.

Kimley-Horn is able to provide the following services on a solar project: preliminary site assessment; due diligence; commissioning services; environmental/wetlands; system design; interconnect application; entitlements/permitting; 3D visualization; electrical engineering; site civil design; stormwater/hydrology; structural

engineering; traffic engineering; and landscape architecture. Kimley-Horn is able to leverage its relationships with USACE across the state, as well as local relationships with DOT, DEQ, and local municipalities, bringing local experience to virtually any project.

Some notable Kimley-Horn solar projects include:

Spotsylvania Solar

Spotsylvania County, VA – 500 MW

Skipjack Solar

Charles City County, VA – 175 MW

Cartersville Solar

Powhatan County, VA – 100 MW

Palmetto Solar

Lee County, NC – 74 MW

Ladybug Solar

Mecklenburg County, VA – 65 MW

Madison Solar

Orange County, VA – 60 MW

Shawboro Solar

Shawboro County, NC – 20 MW

Edgecombe Solar

Edgecombe County, NC – 20 MW

Who We Are: Brock Storrusten– WithersRavenel VP

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

Brock serves as Vice President and Director of Land Development at WithersRavenel. He is one of LDDI's newest Advisory Board members.

What is your specialty within the land development industry?

My experience has been extremely diverse in the civil engineering field, from planning through construction.

What attracts you to land development?

I enjoy placemaking for generations to come and being proud of the actual constructed environment.

Please mention the highlights of your career?

I learned geotechnical work with the NDDOT, taught at North Dakota State University, wrote code for a metal building software company, grew up in a private firm for 18+ years, lead encroachment efforts with the NCDOT, built an office in oil country for the same private firm, and landed in NC with a great firm, WithersRavenel. I am a professional engineer in five states with broad-based engineering and management experience in small- and large-scale developments; recreational facilities; transportation;

utilities; stormwater; and flooding and erosion control systems. I also have substantial experience providing planning, engineering, and governance assistance to local governments, including serving as an Assistant City Engineer for more than 10 years.

What motivated you to become involved with LDDI?

I decided to get involved with LDDI because of the great work VT is doing to educate our future leaders in the land development field and to assist in spreading the word in NC and across the US.

What do you think are the strengths of this program?

Among the program's many strengths is the amount of real world and software instruction and learning in the land development industry, which is the best of any university that I know.

Could you please share something unique about you?

I lived in North Dakota for more than 45 years and have seen 45 below and 100 below windchills in my life. I have also been a Public Address Announcer for football, baseball, basketball, and hockey events.



"LDDI offers opportunities for students to collaborate with industry professionals and provides practical application of real-world projects, which enables students to contribute to our success immediately when joining our team." - Brock Storrusten, WithersRavenel VP and Director of Land Development

ADS Pipe Selected for Christiansburg Drainage Improvements

edited by Kelly Shayne Young

The Town of Christiansburg secured a 2017 Dam Safety, Flood Presentation and Protection Assistance Fund grant to conduct a downtown watershed study. The goal of the study was to evaluate drainage and flooding issues along Towne Branch and its floodplains, and to develop a list of planned drainage improvements by the Town. Two of those major drainage improvement projects were the Han's Meadow Road and North Franklin Street Drainage Improvements. The Town and design engineers allowed several VDOT approved storm sewer materials to be used on each project. The awarded contractors preferred the use of Advanced Drainage Systems (ADS) polypropylene pipe (HP), which the Town and design engineers approved for both projects. HP polypropylene pipe is lightweight, durable, corrosion resistant, and provides watertight joints with a 100-year service life.

"I feel both projects (Han's Meadow Road and North Franklin Street Drainage Improvements) went great and were

successful," stated Justin St Clair, Asst. Engineering Director for the Town of Christiansburg. "We gave our contractors the option between various pipe materials and manufacturers and they selected the ADS pipe. This material with the longer lengths allowed them to shorten the construction schedule."

Wesley Davidson, Vice President of Construction for King General Contractors explained, "We choose this pipe (on Han's Meadow Road Drainage Improvements) based on recommendations from our supplier. We found the pipe easily maneuverable because of the weight compared to other pipe materials. The installation process was easy and had a very short learning curve. We were installing the pipe at depths of 10 plus feet and did not have any deformation after the backfill was placed. We also found the pipe to be very tough and robust while being installed and would definitely choose this pipe material on future projects."



ADS polypropylene pipe was selected for use on two major drainage improvement projects in the Town of Christiansburg, VA.

**Thank you to our
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and municipal
members!**

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▪ *Bohler Engineering*
▪ *Bowman Consulting*
▪ *Concrete Pipe and Precast, LLC* ▪ *Pennoni Associates, Inc.*

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MUNICIPAL

Fairfax County ▪ *City of Alexandria*

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Timmons Group Blends Education and Entertainment with VSU's Multi-Purpose Center

edited by Kelly Shayne Young

The best way to incorporate both education and entertainment into a project's design is to start with a team of Hokies. The Timmons Group team, led by Virginia Tech graduate Steve Hostetler and including more than a dozen Hokie graduates, provided civil engineering and landscape architecture services for Virginia State University's Multi-Purpose Center.



A state-of-the-art venue, Virginia State University's Multi-Purpose Center is the largest events venue located south of Richmond, VA and is home to the Trojans basketball and volleyball teams.

The 165,000 SF state-of-the-art venue has created a stunning arena space to host basketball games and concerts. It also provides office space for the Athletic Department and classroom space for the university's Department of Mass Communications.

To provide an outdoor gathering space for students and faculty, a large, one-acre, flexible plaza space was planned. Small seating areas mixed with a large open space allow for year-round student use and gameday events. The plaza is composed of brick and concrete paving with accent bands oriented toward the heart of campus. Planes of green space interrupt the hardscape, providing shade and natural elements adjacent to the building.

Full services provided for the project include traffic studies, an environmental impact report, survey, civil engineering, and landscape architecture. Timmons Group also assisted VSU in the initial property acquisition and in coordinating River Road widening improvements with Chesterfield County, in support of the project.

Municipal Engineering Welcomes Matt Stolte

by Kevin Young

CEE 4254, Municipal Engineering, introduces students to the role of municipal engineers, and the important relationship that exists between these professionals and the land development industry. Alongside traditional lectures, the course features guest speakers and volunteers from municipal governments across the state who work directly with students as project mentors. Since the course made its debut in 2010, it was traditionally only offered during the spring semester of alternating years. Spring 2019 marked the first time that the course was offered in back-to-back spring semesters, and the enrollment of 48 students quickly removed any questions regarding the demand for this increased frequency. Looking forward, LDDI intends to offer the course each spring semester.

Following a two-year tenure as the most recent course instructor, the Town of Blacksburg's Randy Formica will be handing teaching duties over to his colleague at the Town, Matt Stolte, beginning in the spring 2020. LDDI wishes to thank Randy for his time teaching the course, and welcome Matt to the lineage of course instructors that, in addition to Randy, includes Mr. Jimmie Jenkins, Ms. Meredith Jones, and Ms. Adele Schirmer. Matt will be assisted in course organization and design by James Patteson (Retired Fairfax County Director of Public Works and Environmental Services) and LDDI Coordinator Dr. Randy Dymond. Matt is eager to get started on the course and states, "I am looking forward to taking on the LDDI Municipal Engineering course. In my ramp up to the spring 2020 semester, I've been impressed by the quality and volume of materials developed by previous course instructors, and I look forward to both using these materials and developing my own contributions to the course. I believe the Municipal course is an important component of the overall LDDI curriculum to prepare students for infrastructure engineering jobs and I am thrilled at the opportunity to take a lead on it!"