



LDDI Bridges

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LDDI Bridges
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Environmental
Engineering



Happy New Year from Virginia Tech and the LDDI family! I hope that this newsletter finds you, your loved ones, and your organization off to a wonderful start in 2020. It's an exciting time of year, and we're actively ramping up for a spring semester whose start is just around the corner. This spring, Assistant Professors of Practice Claire White and Kevin Young will each teach a section of our junior-level Introduction to Land Development course. We're also excited to welcome Matt Stolte (Town of Blacksburg) into the classroom, as he makes his teaching debut in our Municipal Engineering course. As many of you already know, I will be retiring in 2020, and the spring semester marks my last in the classroom. While I'm sure to face a mix of emotions as retirement draws closer, I couldn't possibly think of a better way to conclude my teaching career than with LDDI's hallmark course, Land Development Design. I'm excited to work with the professional mentors to jointly steer our talented students through their design projects. Before the semester begins, on January 10th, LDDI will host its annual winter meeting in Northern Virginia. This winter's meeting features a panel of guest speakers discussing municipal and strategic planning efforts in Northern Virginia. Attendees will also enjoy an LDDI program update, student presentations, professional networking, and an opportunity to obtain two PDH credits.

I hope you've enjoyed the more frequent publication of our newsletter in 2019, and that it's helped to keep you engaged with LDDI activities on and off campus. On behalf of myself, Assistant Coordinator Kevin Young, and the LDDI Advisory Board, best wishes to you and your organization for a prosperous 2020!

Dr. Randy Dymond, PE, VT LDDI Coordinator

Get Involved in 2020!

by Kevin Young

At the beginning of each new year, we like to provide you with opportunities to become involved with LDDI on a personal level. Perhaps you're interested in delivering a guest lecture to a class or speaking to the Sustainable Land Development Club at an after-hours function. Maybe you have a project that you feel would make an ideal field trip destination. There's likely an opportunity for you, and we encourage you to become involved through one of LDDI's four standing committees, described, below:

LDDI's Course and Curriculum Enhancement Committee (CCEC) works to continually improve LDDI's undergraduate curriculum, with a primary objective of preparing students for careers in the land development industry. To become involved with the CCEC, please contact Committee Chair Andy Gorecki (andygorecki@ccl-eng.com).

LDDI's Practitioner Involvement Committee (PIC) focuses on developing a strong and sustainable relationship between all sectors of the land development profession and students at Virginia Tech. The PIC works closely with, and supports the activities of, the Sustainable Land Development Club (SLDC). To become involved with the PIC, please contact Committee Chair Josh MacDonald (Josh.MacDonald@timmons.com).

The major objectives of LDDI's Outreach Committee (OC) are: 1) promote the field of land development engineering to students; and 2) promote LDDI to industry professionals to encourage their participation and support of the program. The OC also plays a critical role in LDDI's annual sponsorship drive. To get involved with the OC, please contact either Committee Co-Chair Brett Buckland (bbuckland@bohlereng.com) or Charlie Yowell (cyowell@bohlereng.com).

The Research and Development Committee's (RDC) primary objective is to oversee efforts to conduct and administer independent research efforts aimed at providing scientifically based evidence concerning the practicality and suitability of existing and emerging techniques, technologies, and policies to address engineering issues related to land development design. To become involved with the RDC, please contact either Committee Co-Chairs Clay Hodges (ch72@vt.edu) or James Patteson (james.patteson@fairfaxcounty.gov).



Dewberry is currently designing numerous infrastructure improvements for Brandon Avenue, a district on the University of Virginia campus at the intersection of the academic and health system grounds.

Dewberry Provides Infrastructure Expertise to UVA's Brandon Avenue Development

edited by Kelly Shayne Young

The Brandon Avenue Development at the University of Virginia (UVA) will support new academic, research, and residential buildings. Dewberry is currently designing the full utility infrastructure backbone to support this phased development as the University continues to grow. During the development of the master plan, this area was quickly identified as a redevelopment area that could support academic, research, and residential uses totaling 445,000 GSF of new construction. Dewberry also developed a utility master plan for the district including a new low temperature hot water (LTHW) hub and distribution piping to all nine buildings. In addition, the utility master plan studied domestic water, chilled water, sanitary sewer, storm sewer, stormwater management, electrical distribution, and communications.

Services for the urban design and precinct master plan included the analysis of utilities, stormwater, pedestrian/bike paths, road layout, and parking configurations. The final conceptual design comprises a mix of residential, student health, and academic uses and anchored by an urban streetscape with bioretention median.

Dewberry is currently providing site/civil, utility, mechanical, and electrical engineering services for the Brandon Avenue District Green Street and Utility Infrastructure Project. Utility design will include electrical, water, sewer and hot water, and chilled water to support the growth of the district. Additional services involve stormwater management, lighting design, roadway realignment, traffic control, and bioretention design.



The first mixed-use development slated for the Town of Herndon's transit-oriented core, 555 Herndon Parkway will boast a vibrant, multifaceted, pedestrian-friendly space.

Renderings by christopher consultants

christopher Helps Bring First Mixed-Use Development to Herndon, VA

edited by Kelly Shayne Young

Progress continues at 555 Herndon Parkway, the Town of Herndon's first mixed-use development. Situated along the Metro's Silver Line, it will be the first transit-oriented development serving the Town's vision for the corridor, which was first established in 2012. The 4.3-acre property includes two residential towers, a 23+ story office building, ground-floor retail and pedestrian focused open space. Town officials approved the new development on April 9, 2019.

The development team, comprised of Penzance, DCS Design, Wire Gill, Gorove Slade and christopher's Planning and Landscape Architecture Division, were engaged to provide a site design that would inform drivers and bikers that upon entering the space, pedestrians are priority. Creating the new hub of urban development for the Town presented unique challenges in order to provide adequate circulation routes for vehicles, bicycles, and pedestrians alike. The trapezoidal site pushed the designers to create a space in which surface sharing is

paramount and would set a standard for future developments within the Town of Herndon's Transit Oriented Core (HTOC).

The team designed a multifaceted public accessible space anchored by a centralized plaza that can be programmed in a variety of ways, making the space active and adaptable for events, as well as everyday life for residents and transient users. The plaza generally provides a turf lawn area bound by seat walls. Directly adjacent to the lawn space is a parklet with potential moveable furniture and shade trees.

Herndon Mayor Lisa Merkel and other Town officials are in full support of the new development. 555 Herndon Parkway will bring a modernization to the transit-oriented core while leaving the downtown area "little and cute", says Councilmember Signe Friedrichs. While final details and logistics still need to be decided, the Town of Herndon is looking forward with excitement to its first mixed-use community.

LDDI Graduates in the Industry: Carlos Guerrero

McAdams Designer I

Carlos Guerrero completed his academic career in December 2017, graduating from Virginia Tech with a B.S. in civil engineering; in February 2018, he began his professional career with McAdams. Hailing from El Salvador, Carlos has settled in North Carolina, working in the firm's Charlotte office as a Designer I, soon to be a Designer II.

While a student, Carlos found the LDDI courses to be extremely helpful, particularly Intro to Land Development and the senior design course. "I really enjoyed the intro course with Prof. White," explains Guerrero, "and the senior design course gave me valuable tools and insight on how to deal with a land development project." Carlos applauds the LDDI program for giving its students the unique opportunity to directly engage with companies in the land development industry, as well as a good foundation of CAD skills.

Transitioning from student to practicing engineer has required Carlos to be curious,

analytical, and eager to learn from experienced engineers. In just under two years with McAdams, Guerrero has worked on a large apartment building complex, community parks, 7-eleven commercial projects, and various townhome and large subdivision projects. "As a professional, I have evolved from learning the theoretical aspects of engineering to considering constructability issues, adhering to codes and regulations from municipalities, and getting familiar with the logistics of the civil engineering plans approval processes," notes Carlos. "These challenges are what keep the job interesting."

While Carlos misses the tight-knit community and amazing food that come with being a Hokie, he enjoys playing soccer and hiking around the Charlotte area. He also makes time to sketch and travel.

by Kelly Shayne Young



"I would encourage LDDI students to get an internship with a land development company in order to gain experience and to see the wide ranging scope of work that exists in the land development industry." - Carlos Guerrero, McAdams Designer I

WithersRavenel Lends Services to Amazon Distribution Center in Garner, NC

edited by Kelly Shayne Young

Project Axis is a massive undertaking in Garner, NC, the biggest corporate investment in Garner's history. WithersRavenel has worked on the brownfield redevelopment site since 2008, and working with the developer, architect, site contractor, and multiple government entities molded it into an economic development success story. WithersRavenel led the planning, site surveys, wetland, stream, and buffer evaluation, site design, and off-site road improvement design, and coordinated all entitlements and permitting for this fast-track project. Formerly a food processing facility, the site includes just under 1,800 surface automobile parking spaces and 200 trailer storage spaces, requires more than 75 acres of disturbance, and incorporates two massive underground stormwater detention devices on the brownfield redevelopment site. In addition to the on-site improvements, WithersRavenel

designed just under one mile of roadway improvement plans to convert an adjacent NCDOT roadway from a two-lane roadway with turn lanes into a four-lane median divided roadway with associated turn lanes.

From initial conception to construction, the project team worked with the Town of Garner, NCDEQ, USACE, NCDOT, Wake County, the City of Raleigh, and various economic development agencies to meet the expedited design and permitting deadline of less than six months. This project was unique in that it became a quasi-design/build project as WithersRavenel worked with the developer, the project architect, and the site contractor to deliver the project on time while a prototype for the facility was being developed. This required significant coordination to ensure all plan updates and revisions were communicated to all parties during construction. The project, which broke ground in July of 2018, is slated to be open in the spring of 2020.



Project Axis, a new four-story, 2.6 million square foot distribution center, will soon bring approximately 1,500 jobs to Garner, NC.

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LDDI by the Numbers

by Kevin Young

The January 2019 edition of this newsletter included a piece featuring some quantitative data compiled over the 13-plus-year history of LDDI. The positive feedback received on this piece confirmed our speculation that engineers would love seeing the program's history presented in the form of NUMBERS! The piece was so well received that we decided to update and expand upon it in our first newsletter of 2020. We proudly present to you the updated "LDDI by the Numbers"!

5	The LDDI curriculum features 5 individual courses. Earlier research into 35 peer institutions revealed that only 4 offered even a single course in land development design.
10	For 10 consecutive years, LDDI has provided students the opportunity to attend an all-expenses paid, out-of-town field trip to tour interesting land development projects in various stages of completion. Destinations have included various Northern Virginia locations, Richmond, Williamsburg, Norfolk, and Virginia Beach.
24	Spring '20 will be the 24th consecutive semester that LDDI has hosted its Career Night Mixer on the eve of the CEE Career Fair.
28	Including the January 2020 winter meeting, LDDI has hosted 28 general membership meetings at various locations in Virginia and North Carolina.
28	Since 2006, 28 different firms and organizations have participated in the CEE 4274 student mentoring program.
40	The current LDDI Advisory Board is made up of 40 active and life members, representing various sectors of the land development industry.
46/2	During the 2019-2020 fiscal year, LDDI enjoyed the support of 46 corporate sponsors and 2 municipal members.
79	Since 2006, 79 industry professionals have served as CEE 4274 design project mentors.
80	More than 80 individuals have made personal financial contributions to the LDDI program.
100	Since implementing the professional mentoring program in 2006, students completing CEE 4274 have enjoyed 100% job placement.
813	Since 2006, 813 students have taken LDDI's senior design course (CEE 4274).
2,000	Since its debut in 2008, more than 2,000 students have taken LDDI's junior Introduction to Land Development course.
2,700	Since 2006, more than 2,700 students have taken at least one LDDI course.