



October 2017

Volume 11, Issue 4

In this issue:

- LDDI enjoys record high sponsorship (p. 1)
- New developments come to Fairfax County and VMI (p. 2)
- A recent graduate and an LDDI Board member reflect on the past and present (p. 3)
- Acclaimed sculpture relocates and Williamsburg shopping center transforms (p. 4)

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

Virginia Tech

The Via Department of Civil and Environmental Engineering

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



Fall greetings from the campus of Virginia Tech! After a rather warm start to the semester, we're now starting to feel a bit of chill in the air, and the leaves are doing their best to display their Hokie spirit in various shades of orange and maroon. We're now at the midway point of the fall semester and campus is buzzing with excitement both inside and outside of the classroom. Currently, there are four LDDI course sections underway, with a combined enrollment of more than 200 students! The Sustainable Land Development Club continues to provide opportunities for students with a shared interest in sustainability and land

development to come together. Thus far this semester, the Club has hosted guest speakers from J2 Engineers and VDOT and has upcoming meetings featuring representatives from ADS Pipe and Bohler Engineering. The Club is also in the process of organizing a fundraiser cornhole tournament, with proceeds going toward a local charity.

On Tuesday, October 24th, LDDI will hosts its Career Night Mixer at the Hokie House. This semester's mixer marks the 21st consecutive semester that we've hosted this always-well-attended event. On Monday, December 18th, students in CEE 4274 will present their final, semester-long design projects. If you would like to attend these presentations, please let me or Assistant LDDI Coordinator Kevin Young know! Finally, at a January date yet to be determined, LDDI will host its annual winter meeting in Northern Virginia. Keep a lookout in November for a "save the date" with more information about this meeting.

As you can see, we have lots going on, and it is a very exciting time to be involved with LDDI. I hope you'll enjoy reading this newsletter and learning more about the people and organizations that make our efforts a success. As always, I welcome your feedback on how we can continue to grow and improve the LDDI program.

Dr. Randy Dymond, PE, VT LDDI Coordinator

LDDI Enjoys Record High Sponsorship

by Kevin Young

Since LDDI's inception, program activities have been funded almost exclusively through annual corporate sponsorship and individual donations. While efforts to endow the program continue, the corporate sponsorship program remains the financial lifeblood of LDDI. Maintaining this corporate support and revenue stream requires substantial time and effort each year from the Outreach Committee and many others on the LDDI Advisory Board. This year, those efforts resulted in the recruitment of 45 corporate sponsors, shattering the previous best of 39 sponsors in 2014. At this time, LDDI wishes to extend the sincerest of gratitude to all of these corporate sponsors, and especially recognize those firms signing up as new sponsors, or upgrading their level of previous support:

- Tri-Tek Engineering (upgrade from gold to platinum)
- Contech/Filterra (upgrade to platinum from gold)
- CH2M Hill (upgrade to gold from silver)
- Hurt & Proffitt (upgrade to gold from silver)
- Advance Drainage Systems (new diamond sponsor)
- McAdams Company (new platinum sponsor)
- AECOM (new gold sponsor)
- Delta Airport Consultants (new gold sponsor)
- Hagen Engineering (new gold sponsor)
- Timmons Group (new gold sponsor)
- Vanasse Hangen Brustlin (new gold sponsor)
- Whitman, Requardt & Associates (new gold sponsor)
- William A. Hazel (new gold sponsor)
- Eden & Associates (new silver sponsor)



The redevelopment of the North Hill site will soon provide Fairfax County residents with affordable housing options and a new recreational park.

christopher Project Revitalizes Richmond Highway Corridor

edited by Kelly Shayne Young

Located off Richmond Highway in the Mount Vernon District, the North Hill site in Fairfax County, Virginia, is poised to become a sought-after residential community consisting of multifamily affordable apartment buildings, single-family townhomes, site amenities, and a public passive-use recreational park. christopher consultants' Land Division, to include Virginia Tech alumnus Andy Gorecki, PE, has been working with the County, Penrose Properties, Fairfax County Park Authority, and Community Housing Partners to develop the 35-acre site.

Through the Public-Private Education Facilities and Infrastructure Act (PPEA), CHIPPENN I, LLC, was chosen as the developer. The conceptual plan currently shows affordable units spread across five four-story buildings, sixty units for independent senior living, and 175 market-rate townhomes, along with a 12-acre public plaza that will include a dog park, ping pong and chess tables, fitness equipment, and more.

Though the new area will be a gem for Fairfax County residents, christopher tackled many challenges with the site in the land development and engineering phase. A multi-phased approach is required due to the complexities of the property, which was "split-

zoned"—zoned for three very different uses. christopher provided a comprehensive plan amendment, entitlements, and rezoning prior to final site design.

Marine clay and steep slopes across the site made land acquisition and project financing complex. Through land planning and engineering support, christopher assisted the client in adjusting the proposed site layout and overcoming high construction costs associated with the original layout.

The site also faced community and political pressure to make the project a staple of the Richmond Highway Corridor, including high visibility, preservation of existing features, and pedestrian accessibility. Through tremendous public outreach and strategic planning, christopher assisted the client and architect in negotiating a solution that achieved all goals.

Matthew Bell, Redevelopment and Housing Authority Commissioner for the Mount Vernon District stated that the project "is a great example of what can be achieved when the community, private sector, and government work together." The livable, walkable development is a prime example of how Fairfax County is implementing its strategic Economic Success Plan.

Draper Aden Helps Bring State-of-the-Art Training Facility to VMI

edited by Kelly Shayne Young

Draper Aden Associates provided engineering services for the new construction of VMI's Corps Physical Training Facility. The state-of-the-art 205,000 SF facility, completed in December 2016, houses a 200-meter banked hydraulic track, as well as other training features such as a high ropes course, a challenge initiatives course (CIC), a climbing wall, and a weight and cardio room.

The Corps Physical Training Facility is distinctive in Virginia thanks to its engineering marvels and stormwater control innovations. Perhaps the most unique site constraint was the existing Town Branch creek, which was prone to flooding and runs beneath the new building. Other design challenges included erosion control phasing during construction to prevent sediment from washing into the creek from the job site, as well as investigation and permitting of environmental impacts to the stream caused by construction. In addition to adding a new facility, VMI was able to address the creek's flooding and improve the Post environment.

Building a new facility over a body of water is uncommon because the challenges presented can be overwhelming. Draper

Aden's approach to addressing the stormwater challenge – and intensive regulatory requirements that come with siting a building over a body of water – was to address the problem holistically. Most projects call for one or two stormwater management controls. Understanding the complexity of this project, the Draper Aden team identified, designed, and implemented no fewer than 12 stormwater controls, such as a vegetative roof, bioretention ponds, underground cistern, rainwater harvesting system, manufactured BMPs, and more. These efforts resulted in a number of benefits, including substantially reduced flooding from the creek, collecting rainwater for use in the building's cooling system, and filtering water runoff before it enters the creek.

This combination of solutions marked an innovative approach that makes this project truly unique for the breadth of stormwater controls used. Not only is the Corps Physical Training Facility a stunning new building that serves the VMI community, but the stormwater controls are improving Post life and enhancing the environment.



The Corps Physical Training Facility, VMI's newest building and the first of its kind in terms of scale and magnitude on any military post, supports the extensive physical training required of all cadets and allows such training to be accomplished in all weather conditions.

Who We Are: Jack Vega– Vice President, Dewberry

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

Jack currently serves as Vice President of Dewberry, managing the site/civil group for the Northern Virginia region and coordinating the activities of land development professionals in the Fairfax, Leesburg, and Gainesville offices. He is one of LDDI's newest Advisory Board members.

What is your specialty within the land development industry?

This has changed over the span of my career, beginning with floodplains (hydrologic/hydraulic studies), followed by a few years in storm water management studies (both quantity and quality), that then led me to a career in site/civil/land development engineering design.

What attracts you to land development?

Construction of the projects that I have taken part in the design of.

Please mention the highlights of your career?

It begins and ends with mentoring. Soon after graduation and after starting at Dewberry, I had the opportunity of being mentored by world-class subject matter experts in many technical fields early in my career. From the start, this experience

reinforced the importance of sharing and communicating knowledge acquired with the scores of professionals at every level that make a project successful.

What motivated you to become involved with LDDI?

The need to optimize the time that it took for graduate engineers to adapt to the working world. While the technical and academic skills of graduates remains high, their ability to quickly function efficiently in a design and office environment can be a challenge.

What do you think are the strengths of this program?

The continued involvement and support of students, academia and industry.

Could you please share something unique about you?

I was born in Medellín, Colombia, went to High School in Miami, FL, and attended Virginia Tech during an era where some combination of those three elements led to a variety of cultural, stereotypical assumptions; this led to great conversations that often dispelled unconscious biases of race, language, and culture.



"LDDI provides a forum for students to learn from industry and for industry to learn from students and academia and, through internships, to provide for the exchange of ideas in advance of a student's graduation." - Jack Vega, Dewberry Vice President

LDDI Graduates in the Industry: Jonathan Arevalo

Bohler Engineering Junior Design Engineer

by Kelly Shayne Young

Jonathan Arevalo completed his academic career in May 2016, graduating from Virginia Tech with a B.S. in civil engineering; he then immediately began his professional career with Bohler Engineering. Hailing from Huntington Beach, CA, Jonathan now resides more than 2,500 miles from home, serving Bohler's Washington, D.C. office as a junior design engineer.

While a student, Jonathan took advantage of LDDI's course offerings and had a leg up on his peers at the onset of his professional career. "Coming into the workforce, I had more exposure to land development ideas, a better understanding of the land development process, and more experience in problem solving than many of my peers," he explains. "This experience helped ease the transition from student to practicing engineer." Arevalo feels that the LDDI program excels at getting students exposure to the land development industry, "particularly in the design course," he elaborates, "when students get the chance

to work with mentors from land development companies. That exposure and hands-on experience gives VT students a head start in any land development career they pursue."

Having spent more than a year in the professional world, Jonathan has learned that attention to detail and motivated problem solving are key to any successful project. He has realized in his time at Bohler that, since there are several possible solutions to every design problem, having the drive and problem solving skills to deliver the best result is essential. Arevalo has had the opportunity to hone his skills working on a range of projects, including the design of several mixed-use residential projects near the Nationals Ballpark and the renovation of an old college dorm into a luxury apartment complex.

While Jonathan misses the beauty of Virginia Tech's campus and home football games, he enjoys his new life in DC, playing soccer, reading, and spending time with his dog, Percy.



"Students interested in land development should take the LDDI design course and meet with the available professionals to learn what they do on a day-to-day basis." - Jonathan Arevalo, Bohler Junior Design Engineer

Thank you

to our corporate sponsors and individual donors!

DIAMOND: Advanced Drainage Systems • Bohler Engineering • Bowman Consulting • Pennoni Associates, Inc.

PLATINUM: AES Consulting Engineers • ATCS, P.L.C. • christopher consultants, ltd. • Clark Nexsen • Contech Engineered Solutions • Dewberry • Draper Aden Associates • Gordon • J2 Engineers, Inc. • Kimley-Horn and Associates, Inc. • Maser Consulting • McAdams • Tri-Tek Engineering

GOLD: AECOM • Accumark Sub-surface Utility Services • Brookfield Homes • Burgess & Niple, Inc. • CH2MHill • Cowen Design Group, LLC • Delta Airport Consultants • ESP Associates • Fairfax County • Gay and Neel, Inc. • Hagen Engineering • Hurt & Proffitt • Land Design Consultants • Paciulli, Simmons & Associates • Rinker Design Associates • Timmons Group • Walter L. Phillips, Inc. • Whitman Reardon & Associates • William A. Hazel, Inc. • Van Metre Homes • Vanasse Hangen Brustlin, Inc. • Youngblood, Tyler & Associates, P.C.

SILVER: AllSite Contracting • Balzer & Associates, Inc. • Mr. Bob Hubbell • Eden & Associates • Genuario Companies • Mattern & Craig • McKim & Creed • Ramey Kemp & Associates • Wetland Studies

INDIVIDUAL DONORS:

Legacy: Julian B. Bell, Jr.

Diamond: Gary Bowman

Platinum: Paul Johnson, Tom Rust

Silver: Alisa Cowen, Bill Junda, Bryan Stevenson

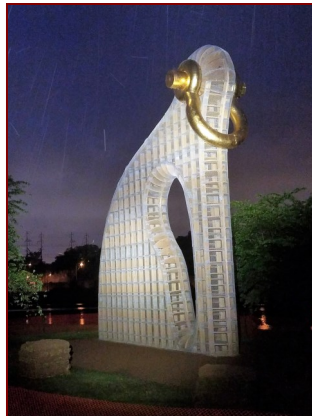
Orange and Maroon: Billy Anderson • Joe Arrowsmith • Jesse Berg • Mary Ann Bonadeo • Bob Brown • Barry Bryant • Brett Buckland • Michael Cardman • Tyson Catlett • Derrick Cave • Gil Coleman • DFT Data Centers • Caleb Hurst • Bob Jansen • Jeff Lighthiser • Spud Mistr • Charles Nuckols • Peterson Family Foundation • Lawrence Phipps • Bill Pyle • William G. Reynolds • Mark Richardson • Patrick Shaffner • Jefferson Sinclair

LDDI Supporters: Arvil Catlett • Greg Deubler • Rick DiSalvo • Mike Flagg • Mark Huffman • Jimmie Jenkins • Meredith Jones • Peter Lazarevich • James Paterson • Greg Stecher • Drew Sullivan • Jack Vega • Claire and Kyle White • Joe Whitebread • wpl

LDDI Bridges October 2017

Pennoni Continues to Support Public Art

edited by Kelly Shayne Young



Big Bling, a 40' high sculpture by Martin Puryear, is joining a group of noteworthy Kelly Drive sculptures through November 2017.

Big Bling is the largest sculpture by artist Martin Puryear and was moved from New York City to Philadelphia for a six-month stay. The internationally acclaimed sculpture was installed in early July of 2017 on the east side of the Schuylkill River along Kelly Drive. The sculpture is a combination of animal forms and abstraction made with more than 26,000 lbs. of pressure-treated laminated timbers, glulam wood, plywood, chain-link fence, fiberglass, and gold leaf.

The Big Bling installation was the result of a collaboration between Philadelphia's Association for Public Art and the Madison Square Park Conservancy, which commissioned the piece. The Philadelphia association, formerly known as the Fairmount Park Art Association, commissioned an earlier Puryear work, Pavilion in the Trees, which was permanently installed in Fairmount Park in 1993 on the west side of the river. The sculpture, which is approximately 38' long and over 40' tall, was relocated to Philadelphia in pieces.

Pennoni coordinated with the client to determine the best options for siting the work, including providing a survey and utility investigations for two sites. Pennoni then

prepared site construction plans, foundation design, and construction drawings for the placement. Through a design-build contract, Pennoni coordinated the information on the plans, bid the construction to multiple sub-contractors, supervised the construction, and coordinated the lighting of the sculpture with the client.

Pennoni was able to provide hands-on processing of permits and expedited bidding and construction through relationships with the City and the trades. The sculpture installation was completed approximately one week before the ribbon cutting.

AES Lends Services to Williamsburg Shopping Center Redevelopment

edited by Kelly Shayne Young

A Maryland-based real estate firm plans to transform the 58-year-old Williamsburg Shopping Center into Midtown Williamsburg. The new mixed-use development will include new landscaped pedestrian boulevards, a public plaza, art work, wide sidewalks, bike lanes, and 380,000 square feet of new residential and retail space.

AES is providing surveying and engineering design services to address a number of onsite challenges. With very little room on-site for above ground stormwater management BMPs, underground storage pipes were necessary for attenuation. Energy balance and flow attenuation had to be met at each of the multiple storm pipe discharge points, and the flat gradient of the site nearest to Richmond Road, coupled with correspondingly shallow existing storm pipe networks, made tying in proposed storm pipe difficult. Also, when faced with a steep longitudinal slope along Monticello Avenue, the design team was compelled to build steps and multiple retaining walls to accommodate the significant grade change from one end of the site to the other.

The long-awaited redevelopment of this 19-acre site is sure to stimulate economic growth and create a pedestrian-friendly area for Williamsburg residents and visitors.



The Williamsburg Shopping Center will soon be transformed into a new mixed-use development.