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### LDDI Bridges

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

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*Greetings from the campus of Virginia Tech! As the spring semester begins to wind down, I hope this edition of the LDDI Bridges newsletter finds you and your organization enjoying a healthy and prosperous 2017. It has been another busy and exciting year for LDDI as we continue working to ensure that Virginia Tech remains on the leading edge of undergraduate land development design education. I hope you will enjoy reading this newsletter and learning more about LDDI events over the past year, as well as some of the people and organizations that help to make us successful.*

*While the academic year may be rapidly drawing to a close, it's hardly a time of rest for those of us involved with LDDI. On Friday, April 21<sup>st</sup>, the LDDI Advisory Board will convene on campus for its annual spring meeting. It is during this annual spring meeting that LDDI selects its officers and committee chairs for the upcoming year. This meeting is also one of our most important of the year, as it marks the beginning of our annual sponsorship drive. While the spring Advisory Board meeting serves as the official kickoff for the annual sponsorship drive, our Outreach Committee has already been active on this front, having hosted a meeting in Charlotte earlier this month that you'll soon read about! During the April 21<sup>st</sup> meeting, we will also be selecting a date for our annual summer meeting in Richmond, so keep lookout for your invitation. As always, I invite your feedback on how we can improve this newsletter or any other aspect of the LDDI program!*

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

## LDDI Hits the Road to Charlotte

*by Kevin Young*

Earlier this month, LDDI hosted an outreach meeting in Charlotte, NC to spread the word about the program's unique partnership between academia and the land development industry. The meeting marks the first regional outreach effort that LDDI has taken across state lines. The meeting was attended by approximately 25 individuals, representing 11 different firms, most of which are headquartered in North Carolina. During the January meeting of the LDDI Advisory Board, several possible outreach destinations were discussed, with Charlotte ultimately chosen for a number of reasons. Tracking of LDDI graduates over recent years reveals that Charlotte has very quickly emerged as a destination region.

Predicated on an organic growth model, it is essential that the LDDI network expands regionally, along with the placement of its graduates. One of these graduates is Brett Buckland who, during his time as a graduate student at Virginia Tech, was a TA for multiple LDDI courses and served as the student representative on the LDDI Advisory Board. Now with Bohler Engineering's Charlotte office, Buckland states, "I decided to come to Charlotte at the beginning of 2014 because it was a young, growing area that I thought would provide many opportunities. I feel like Charlotte is becoming a spot for many Hokie grads to move, and is an alternative to the typical Northern Virginia, Richmond, and Virginia Beach destinations." LDDI would like to thank Skip Notte and his staff at the Dewberry office in Charlotte for hosting the meeting. The next LDDI outreach meeting will be discussed during the April 21<sup>st</sup> Advisory Board meeting, with Baltimore currently being considered as the next destination.



*LDDI Coordinator, Dr. Randy Dymond, speaks to attendees at the spring '17 outreach road show in Charlotte.*



*At the completion of the Metropolitan Park Phase 6 development, Arlington County's Pentagon City community will gain vibrant mixed-use residential and retail space.*

## **Bowman Consulting Provides Services for Metropolitan Park Phase 6 Development**

*edited by Kelly Shayne Young*

Located in southeastern Arlington County, VA, the Metropolitan Park development is part of the Pentagon City Phased Development Site Plan (PDSP) and includes 10 buildings spanning 16 acres that were previously warehouses or parking lots. The Metropolitan Park Phase 6, also known as "Met 6", is envisioned to continue the revitalization of Crystal City and Pentagon City. The proposed Met 6 project will consist of the redevelopment of aging industrial use sites to vibrant mixed-use residential buildings including approximately 550 units and street level retail space. The new buildings will range in height from 18 to 22 stories and will include design and construction of new public streets and infrastructure along all four sides of the site, all of which will be built to Arlington County public standards.

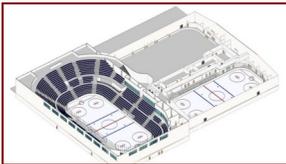
The project was designed and developed in accordance with the adopted Metropolitan Park Design Guidelines, as well as many recommended changes to those guidelines by Arlington County. These changes were made in response to recently approved adjacent projects and were designed to obtain LEED Silver certification. Bowman Consulting provided full engineering and surveying support for the project from conceptual design to final construction documents. In addition, Bowman provided support through the complete administrative 4.1 site plan process, including site plan review committee meetings, Transportation Commission, Planning Commission, and finally County Board approval.

The final engineering permit plans for this project are currently under review.



## **J2 Engineers Lends Services to the ION International Training Center**

*edited by Kelly Shayne Young*



*Located just outside of Leesburg, VA, the 89,000-square-foot ION International Training Center will boast a NHL-sized ice rink with a multi-functional floor.*

The ION International Training Center is an ice skating facility to be located just outside the Town of Leesburg, VA, in the Compass Creek development owned by the Peterson Companies. The project proposes an 89,000-square-foot facility that will have the capacity to serve as an Olympic-style training center or a rink open for public skating and lessons, as well as an event facility capable of hosting large groups for occasions such as graduation ceremonies, hockey exhibitions, or concerts. The \$19.5 million Center will initially feature two National Hockey League size ice sheets. The two-story building also will include a full-service gym, cafe, pro shop, medical room, and hockey training room, among other amenities. One of the rinks will feature a multifunctional floor that will be accessible for non-ice related sporting events. It will be encircled by stadium style seating for up to 3,570 people, with a maximum facility occupancy of 5,350.

One of the challenges associated with this project involved adequately modeling the water demands from the various components of the facility which, aside from general domestic water usage, also include ice resurfacing and water evaporation for

refrigeration cycles. Fast tracking the plan approval process through two different jurisdictions and addressing FAA obstruction evaluation and airport air space analysis for the building, light poles, and the temporary construction cranes also proved challenging.

Interestingly, the project includes two distinct ice rink designs, with one of the sheets having a sand base system and the other a concrete base system to support the stadium seating and special events. The ice sheets require up to 400 gallons of 130° F water per hour for the resurfacing process, which involves cutting the ice, removing the snow from the ice sheet, and applying a new layer of water that is less than 1/64" thick. The facility also proposes an indoor snow melting pit, which disposes 50-100 cubic feet of snow and eliminates the need for the Zamboni to travel outdoors; this reduces the added humidity and heat loading into the facility and provides clean water runoff.

The center, with close to 900 parking spaces, a stormwater management pond, and room to expand to four ice sheets, will span 15 acres and is scheduled to open prior to the 2018 Winter Olympics.

## Who We Are: Caleb Hurst - Senior Civil Engineer and Associate, Clark Nexsen

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

Caleb currently serves as Senior Civil Engineer and Associate at Clark Nexsen. He has been involved with LDDI since 2011 and is its newest Advisory Board member. As part of his commitment to LDDI, he is also serving as a mentor for the 4274 class for the fifth time.

### What is your specialty within the land development industry?

Land development and site plan design.

### What attracts you to land development?

I enjoy the challenges of the variety of projects. Every site is different with unique problems to solve. It is also gratifying to consider the end-user of the designed project and meeting their needs.

### Please mention the highlights of your career?

I graduated from Virginia Tech in 1997 and am licensed as a Professional Engineer in 10 states. My project experience stretches from Florida to Maine, including higher education, industrial, Department of Defense, and various mixed-use and commercial projects. A few highlights include VMI Third Barracks, ODU Foreman

Field, Hangar and Airfield Improvements at Norfolk Naval Station, and the North Gate Complex with Norfolk International Terminals, which is currently under construction.

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

Having a sincere passion for both civil engineering and Virginia Tech made my commitment to LDDI an easy decision. It is very rewarding to mentor students and watch them grow and improve.

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

The opportunity for students to interact with consultants in the civil engineering field is priceless. LDDI provides these opportunities for students to meet with professionals in multiple formal and informal environments.

### Could you please share something unique about yourself?

My twin brother also graduated from Virginia Tech in civil engineering and works with me at Clark Nexsen. Twins abound in my family as I am not only a twin myself, but also the father of 10-year old twins.



*"The practical application of real projects helps prepare LDDI students to enter the engineering world in a professional capacity."* - Caleb Hurst, Clark Nexsen Senior Civil Engineer and Associate

## LDDI Graduates in the Industry: Michael Roselius

*GORDON Staff Engineer*

*by Kelly Shayne Young*

Michael Roselius accepted a job offer from GORDON during the fall of his senior year in college, lessening the stress many students experience during their final semester. After graduating from Virginia Tech in May 2015, he took some much needed and deserved time off to travel and spend time with family. Michael began working for GORDON in August 2015 and currently serves as a staff engineer in the firm's Chantilly, VA office.

While a student, Michael took every class offered through the LDDI curriculum and enjoyed them all. However, the land development design courses prepared him the most for his current position. "The design classes were the most helpful," explains Roselius. "The instructors overviewed the process of creating a site plan, which is 90% of my day-to-day responsibilities." Michael feels that the LDDI program sets Hokies apart from other schools' graduates. He estimates that "GORDON hires an overwhelming majority of its new engineers from Virginia Tech because those who have gone through the

LDDI program need minimal training. We have plenty of quality engineers from other universities, but let's just say that the LDDI graduates hit the ground running."

With a year and a half in the industry under his belt, Michael has adjusted to the challenges of transitioning from "student" to "professional," namely project tracking, time management, and working in a team environment. "However, communication," he emphasizes, "is probably the biggest skill for any practicing professional. Clear communication with supervisors, teammates, subconsultants, reviewing authorities, and our clients can make or break a project; this includes coordinating with other departments to ensure everyone is working towards a common goal with mutual expectations."

While Michael misses the football games and flexible schedule of student life, he manages to find time for hiking, bike riding, camping, snowboarding, and playing games with his fiancé and family. He also has two cats and volunteers his time at local animal shelters.



*"Good engineering comes with experience and learning from prior mistakes. Learning from other people's mistakes is even better, so pay attention to the world around you, as the lessons are plentiful."* - Michael Roselius - GORDON Staff Engineer

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## LDDI Bridges April 2017

### A Busy Academic Year for LDDI's PIC

by Kevin Young

With the 2016-17 academic year rapidly drawing to a close, it seems like the perfect opportunity to pause and revisit some of the out-of-the-classroom events and activities that LDDI's Practitioner Involvement Committee (PIC) has facilitated over the past nine months. It has been an exciting (and busy!) year for the PIC, and once again Virginia Tech CEE students benefitted immensely from the generous giving of time and resources by professionals in the LDDI network.

Things began way back in August when, during the second week of the fall semester, the PIC hosted a kickoff social for new students interested in becoming involved in the Sustainable Land

Development Club (SLDC). This social is a longstanding tradition, and provides an opportunity for current club members and officers to recruit new club members and build their excitement and enthusiasm. In October, and then again in February, LDDI continued its tradition of hosting a "Career Night" mixer on the eve of the Civil & Environmental Engineering Career Fair. The fall '16 and spring '17 Career Night mixers marked the 19<sup>th</sup> and 20<sup>th</sup> consecutive semesters, respectively, that the event has been held. As in years past, these mixers were extremely well attended and provided an unparalleled opportunity for students and employers to meet and mingle in a relaxed setting prior to what can be, at times, a chaotic CEE Career Fair.



*Pennoni's Greg Deubler talks to students on a jobsite during the spring '17 field trip to Norfolk.*

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In late October, members of the SLDC gathered for one of everyone's favorite fall pastimes – Hokie football! This year's football viewing party was held at PK's restaurant, and SLDC members enjoyed a thrilling game with the Hokies ultimately prevailing over the Pitt Panthers. In March, LDDI Assistant Coordinator Kevin Young led a group of SLDC students on a field trip to Norfolk, VA, where the students toured a diverse mix of land development projects lined up by Pennoni's Greg Deubler. LDDI has long recognized and appreciated the value of getting students onto active construction sites, and the spring '17 field trip marks the fifth overnight, out-of-town field trip that the PIC has organized. LDDI covered all of the students' travel, food, and lodging costs while on the trip. In late March, LDDI hosted its fifth annual Design Charrette and Challenge. Leading the event for the third time, Dewberry's Skip Notte provided students with a brief introduction to a real-world site and client's development goals. Student teams were then given one-hour to work toward a design that met those goals while also adhering to relevant codes and design principles. Dinner was provided to the student participants, and their designs were judged by Notte, CEE department faculty members, and local professionals. In total, 24 students participated, and the top team took home a \$100 gift card to Buffalo Wild Wings.

Last, but certainly not least, SLDC members continued providing logistical assistance to Across the Way Productions on FloydFest and other music, wine, and art festivals put on by the group across the state. "It has been another exciting year for LDDI's Practitioner Involvement Committee, and I continue to be amazed by the students' enthusiasm," reflects PIC Chair Kevin Murray (Tri-Tek Engineering). "Whether it's giving up a weekend in Blacksburg to travel across the state and spend a Saturday morning touring active jobsites, or networking with potential employers in advance of the career fair, LDDI students are engaged and always eager to learn more about our profession."



*SLDC members enjoy the Hokies' win over Pitt during the fall '17 football viewing party.*



*Students work on their design during the spring '17 LDDI Design Charrette and Challenge.*