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### In this issue:

- LDDI welcomes new Advisory Board members (p. 1)
- Redevelopment projects in Fairfax and Virginia Beach, VA (p. 2)
- Improvements to Loudoun County high school facilities (p. 3)
- A recent graduate reflects on the past and present (p. 3)
- SLDC's eventful year (p. 4)

### LDDI Bridges

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

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*Greetings from the campus of Virginia Tech, where temperatures are rising, flowers are blooming, and campus is in a frenzy! It seems like only yesterday that we were gathered on a cold January morning in Arlington for our annual winter meeting. Yet, in less than three weeks the spring 2015 semester will come to an end. For graduating seniors, life is hectic as they juggle their job search with course projects, upcoming finals, the FE exam, and planning for graduation celebrations. For those with time still yet to be spent in a Patton Hall classroom, it's also an exciting time of year as students look forward to summer*

*internships, jobs, vacations, and perhaps a summer course. Spring is also a critical time of year for LDDI outside of the classroom as we begin our annual corporate sponsorship drive. On April 24<sup>th</sup>, the LDDI Advisory Board convened on campus to elect new officers and committee chairs, review and update the program's strategic plan and budget, critically evaluate the need for increased program resources, and discuss means of ensuring long-term sustainability. It's an exciting time to be involved with LDDI, and we welcome your feedback on how we can continually improve our unique partnership between academia and the land development industry.*

*I hope you will enjoy reading this newsletter, and I would like to draw special attention to the update regarding the expansion of the LDDI Advisory Board. Please join me in welcoming our newest representatives to the board; we look forward to working with them to continually improve the program!*

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

## LDDI Expands Advisory Board

*by Kevin Young*

Since its inception in 2006, LDDI has embraced an organic, "grass roots" model for growth. At its core, this model relies on a steady, unrelenting expansion of our network of professionals in all corners of the land development industry. It is the ideas, unique talents and perspectives, energy, and resources of the people comprising this network that enable Virginia Tech to stake claim to the most comprehensive undergraduate land development design curriculum in the country. A key constituency of LDDI's overall membership is its Advisory Board. The Board maintains LDDI's strategic plan, manages its annual budget, conducts its annual sponsorship drive, steers practitioner involvement inside and outside of the classroom, and performs countless other important tasks. Earlier this month, LDDI expanded its Board membership to include several new faces. I hope you will join us in welcoming the following individuals:

- Alisa Cowen – Owner, Cowen Design Group LLC
- Bob Hubbell – President, Brookfield Residential, Washington
- Jon Jolley – Principle Associate, Maser Consulting P.A.
- Bill Junda – C.O.O., Gordon
- Kevin Murray – Owner, Tri-Tek Engineering
- John Neel – President, Gay & Neel, Inc.
- Sue Wolford – Virginia Regional Vice President, Pennoni Associates Inc.

"I am eager to contribute my energy to continue the work of previous Advisory Board members," new Board member Alisa Cowen explains, "and to work collaboratively to develop new strategies necessary to anticipate and meet the ever-changing needs for the future of LDDI." We are excited to begin working with our new members, and we can't wait to see what ideas they bring to the table to improve the LDDI program!



*Bowman Consulting has provided numerous services to the Tysons Corner development.*

## **Bowman Consulting Continues Redevelopment Efforts at Tysons Corner**

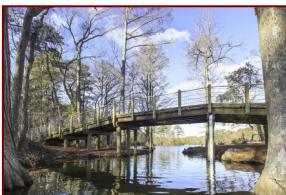
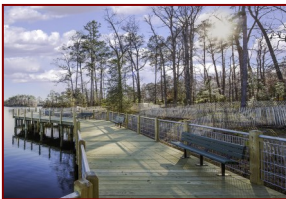
*edited by Kelly Shayne Young*

The Evolution of Tysons Corner was the subject of the January 2013 LDDI general membership meeting in Fairfax, Virginia. Since then, Bowman Consulting (Bowman) has remained involved with the initial phases of the redevelopment of Tysons Corner. Through a collaborative effort of the property owners, developers, Fairfax County, the Virginia Department of Transportation, and the consulting community, a set of design standards was developed specifically for the Tysons Corner Urban Center.

The extension of Metrorail with four Silver Line stations located within Tysons necessitated changes in the traditional approach to zoning, transportation planning, site planning, and redevelopment. The design standards addressed all aspects of development including: building height, square footage and placement; reduced parking ratios due to close proximity to public transportation; roadway and streetscape standards including design considerations for pedestrian and bicycle access; stormwater management and best management practices

standards; established corridors and reservation areas for the routing of public and private utilities; and provisions for parks and open space. Ultimately, the Tysons Corner Urban Center will be a mixed use of retail, office, residential, and civic/public facilities.

To date, Bowman has completed plans for streetscape improvements and road widenings for Jones Branch Drive and Westpark Drive, design of a public park with two synthetic turf fields and stream restorations for Arbor Row, and the site plan for Arbor Row block E, which includes a 27-story high rise apartment building with ground floor retail. Other ongoing work includes the site plan for Arbor Row block A, a 22-story mid to high rise building, which is currently in the plan review process. Finally, Bowman's planners are handling the rezoning for Arbor Row block D, which features 140 condominium units in a 25-story building. In total, Hanover's Arbor Row development includes 2.5 million square feet of residential, retail, and public space .



*Photos courtesy of Clark Nexsen*

*The Lake Lawson/Lake Smith recreational area has been restored and now provides new and improved facilities for area residents and visitors to enjoy.*

## **Clark Nexsen Lends Services to Lake Lawson/Lake Smith Restoration Project**

*edited by Kelly Shayne Young*

The Lake Lawson/ Lake Smith Natural Area restoration project has significantly improved the recreational area in Virginia Beach, Virginia, while preserving the vast majority of the 42-acre natural area.

The City of Virginia Beach selected Clark Nexsen to provide environmental planning, civil, mechanical, electrical, and structural engineering for the project. Working with InSites Landscape Architecture and Virginia Beach Parks & Recreation, Clark Nexsen designed a new fishing pier, boat ramp, crew pier, and pedestrian bridge, five scenic overlooks, and improved on-site parking and walking trails. The site design also provided for the installation of a playground, picnic shelters, and restroom facility to be completed under a separate contract.

The project team's innovative design methods included the use of pavers and bio swales to enhance water quality and protect

the lakes, which serve as a regional water supply. Restoration and stabilization of the eroded shoreline relied on vegetative means over the use of structural approaches including low maintenance seed mixes, replanting of native vegetation, and eradication of invasive species. Mulch trails were constructed throughout the natural area to minimize the impact to the surrounding trees. Pre-construction site walks were conducted with the design team, City staff, and the contractor to identify and protect natural features in the vicinity of the proposed improvements.

Construction by Quality Enterprises USA, Inc. was completed, and the park reopened in October 2014. The park now provides a valuable opportunity for the public to access, appreciate, and enjoy the area, while its natural resources remain protected for future generations.

## J2 Engineers Designs Improvements to Loudoun County High School

*edited by Kelly Shayne Young*

J2 Engineers (J2) provided design services to expand and improve the existing facilities at Broad Run High School in Loudoun County, Virginia. The improvements include: a classroom addition, orchestra room addition, cafeteria renovation, expanded parking lots, upgrades to existing recreational facilities, a sanitary sewer pump station, utility upgrades, and the removal of an existing fueling facility.

The renovation will eliminate the need for outside trailers that currently serve as classrooms. Parking and travelway enhancements will improve vehicular and pedestrian circulation throughout the campus in addition to adding much needed parking. J2 also designed improvements to the school's stadium complex; the existing field will be replaced with a synthetic turf field, and the track surrounding the field will be reconstructed. The stadium upgrades include a press box addition and a new rest room facility.

The existing conditions proved to be the prevalent challenge faced during the

development of the site plan. The primary goal was to utilize existing conditions to the fullest extent possible while delivering a complete, sound design. Improvements were made to existing travelways and parking lots by means of mill and overlay of the existing pavement, and BMP devices were installed to improve water quality. The force main for the new sanitary lift station will go under the baseball field, via a shallow bore, to avoid utility conflicts. As the design neared completion, the development of a phasing plan became an important consideration. J2 worked with Loudoun County Public Schools staff and the project architect to develop a detailed phasing plan for the building and site improvements that will minimize the interruption of school activities (educational and athletic) and maintain a safe environment for students and staff.

The Broad Run High School improvements are scheduled to go to construction this summer and will be completed for the beginning of the 2017-2018 school year.



*J2 Engineers provided services for the expansion and redevelopment of Broad Run High School's existing facilities.*

## LDDI Graduates in the Industry: Charles McKeever

*Gordon Staff Engineer*

*by Kelly Shayne Young*

Hailing from Southwest Virginia, Charles McKeever stayed close to home and became a Hokie after high school, graduating from Virginia Tech in May of 2014. After a much deserved vacation abroad, he went to work for Gordon and currently serves as staff engineer in the firm's Chantilly, Virginia office.

During his time at Virginia Tech, Charles did not waste a single opportunity to learn more about his field of interest, taking five LDDI courses in as many semesters. "By taking the full range of LDDI courses, I gained a more comprehensive understanding of the interactions between all the players of the land development game," explains McKeever, "not only the engineers, but the developer, the municipality, and the development's neighbors." Early on, Charles recognized the benefits of Virginia Tech's LDDI program and believes that "the insight LDDI provides into the professional world of land development is simply unparalleled by other programs."

Since joining Gordon, Charles has

learned that communication and team work are essential to his transition from a recent graduate to a practicing professional. He has also learned to embrace the most challenging aspects of a project, "as they provide opportunities to learn new skills and alternative approaches to problem solving." McKeever has spent the majority of the past nine months focused on a prominent mixed-use development in Loudoun County known as One Loudoun, specifically developing site plans for a child care facility, congregate care facility, and several office buildings. "The grading requirements for the play equipment of the child care facility proved to be quite a challenge," says Charles, "but the application received conditional approval upon its first submission."

When he is not at work, Charles enjoys playing music, hiking, and cycling. He also takes great pleasure in exploring downtown D.C., and his adventurous spirit recently led him on a month-long solo journey to London, Scotland, Germany, and Portugal.



*"LDDI provides a remarkably unique opportunity to interact with industry leaders rather than textbooks alone. Establishing connections with an array of mentors and professional contacts provides a significant advantage for graduating engineers." - Charles McKeever, Gordon Staff Engineer*

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## LDDI Bridges April 2015

### SLDC Wraps Up a Busy and Exciting Year

by Kevin Young

As the spring 2015 semester winds to a close, so does an active year for the Sustainable Land Development Club (SLDC). The SLDC brings together students with a common interest in sustainability as it relates to land development design. LDDI would like to extend thanks to graduating senior Michael Roselius who served as the club's president this year. Michael was joined by Meghan Hekl who served as vice president and Dylan Hale who served as the club's service project coordinator. Meghan will take over in the fall as the club's president.

During both the fall and spring semesters, LDDI and the SLDC continued their tradition of hosting a "Land Development Career Night" on the eve of the Civil & Environmental Engineering (CEE) career fair. Numerous representatives from multiple engineering firms attended the career nights and, as always, student turnout was exceptional. This event provides a tremendous opportunity for students and potential employers to network and connect in advance of the CEE career fair. During the fall semester, the SLDC also hosted a football viewing party for its members.

The spring semester was particularly eventful for the club. In March, club members were treated to a presentation by Bob Bonk (Director of Innovative Surveying Services – Draper Aden Associates). Mr. Bonk spoke on the use of laser scanning technology to collect highly accurate three dimensional survey data in a fraction of the time of conventional survey techniques.



*Bob Bonk (Draper Aden Associates) speaks to a packed house at an after-hours SLDC event.*



*A student team works on their design during the third annual LDDI Design Charrette Competition.*

Later that month, SLDC members participated in LDDI's third annual Design Charrette Competition. Skip Notte (Associate Vice President – Dewberry) visited campus and introduced a real world site design problem to student teams. The teams were then given one hour to work toward a solution. The submittals were judged by local land development professionals, and prizes were given to the top teams. In total, six student teams participated in the event.

In April, and for the third consecutive year, SLDC members provided stakeout surveying of the track for Virginia Tech's annual Relay for Life Event (the largest collegiate Relay in the world!).

The past year also found the SLDC continuing its partnership with the FloydFest music festival. From relatively modest beginnings in 2002, the festival has grown considerably over the past decade. With its rapid growth, festival organizers have encountered numerous challenges, including site layout, shuttling of patrons into and out of the festival grounds, and public safety issues. In past years, SLDC members developed a series of site maps to help festival organizers address these issues. In the spring of 2015, the SLDC continued working with FloydFest to help with the layout of various attractions and public facilities such as vendor tents, food facilities, and parking lots.