

The Land Development Design Initiative (LDDI)

2021 Annual Report



LAND DEVELOPMENT
DESIGN INITIATIVE

PROGRAM COORDINATOR'S MESSAGE

Warmest greetings, and welcome to the 2021 LDDI Annual Report. It is my privilege to once again address you as LDDI Coordinator, and I hope that my message finds you and your family healthy and well, and your organization prosperous and thriving. Since I last addressed you in this capacity, we've navigated what was for many of us the most interesting, if not the most challenging, year of our professional lives. It is with that awareness that I'm so excited about this year's Annual Report, and the opportunity it provides to share with you the ways we maintained the high quality instruction and unique practitioner-student engagement for which LDDI is known, amidst a backdrop that largely precluded in-person assembly. I'm also eager to share with you our new organizational structure, adopted in April of this year, and to highlight the opportunities it provides for LDDI graduates to become involved in steering our future direction. The following pages attempt to capture what was another successful year for LDDI, and I hope you'll enjoy reading about our activities both inside and outside of the classroom, as well as the individuals and organizations that make the program a success.



Each year, this report provides an opportunity to recognize those who give so generously of their time and resources to achieve LDDI's goals and objectives. Acknowledging the challenges faced over the past year, that recognition has perhaps never before been more important. First, I would like to thank the 40 organizations who supported LDDI financially as corporate sponsors and municipal members during our 2020-21 sponsorship cycle. When LDDI launched its annual sponsorship drive last spring there was much economic unrest, and we're grateful to those organizations who maintained their support of the program in the face of an uncertain future. I would also like to thank those who made individual donations last year, and to specifically recognize Mr. Caleb Hurst (Draper Aden Associates), whose efforts helped LDDI enjoy the support of more than 90 individual donors on Virginia Tech's Giving Day. Next, I want to recognize Ms. Sue Wolford (Pennoni) and Mr. Jeff Gilliland (J2 Engineers) for their assistance in developing LDDI's revised and recently adopted organizational structure, the first revision to this framework in the program's 15+ year history. While this effort required the contributions of numerous individuals, I want to specifically recognize Sue and Jeff who carved time out of their busy schedules to meet weekly with myself and LDDI Assistant Coordinator Claire White throughout the spring semester to advance this effort. Within CEE there is also plenty of thanks to go around, starting with Department Head Dr. Mark Widdowson. Dr. Widdowson's support for LDDI has been unrelenting since he assumed the department head role last spring, and Claire and I look forward to continuing our productive working relationship with him. The past year has also seen increasing collaboration between LDDI and the emerging sustainable land development master's program, headed by CEE Assistant Professor Dr. Tripp Shealy. Claire and I have greatly enjoyed working with Dr. Shealy in this capacity, and we look forward to continuing to build the natural synergy between LDDI and this exciting new graduate program. Finally, I want to thank my friend and colleague, LDDI Assistant Coordinator Claire White. Claire's contributions to LDDI are immeasurable, as both a talented instructor and as an administrator, and it is my pleasure to work with her on a daily basis. Please also join me in congratulating Claire who, along with husband Kyle and daughter Lillilan, welcomed an addition to their family, Thomas Wallace White, born on April 20th.

In preparing this year's Annual Report, Claire and I endeavored to cast both a reflective and a celebratory tone. Indeed, there is much to celebrate as LDDI remains healthy and financially secure, enjoys strong support within Virginia Tech CEE and the College of Engineering, and offers among the most popular and sought after courses in the entire undergraduate CEE catalog. Looking ahead to the fall semester, a return to in-person instruction and on-campus activities is further reason to celebrate. I hope as you read the report you join our celebratory mood and reflect back with pride on LDDI's past year of achievements.

Best regards,

A handwritten signature in black ink that reads "K.D. Young". The signature is written in a cursive, slightly stylized font.

Kevin D. Young, P.E., M.ASCE
Coordinator, Land Development Design Initiative
Assistant Professor of Practice, Civil & Environmental Engineering
Virginia Tech

LDDI EXECUTIVE BOARD'S MESSAGE

As Chair and Vice Chair of the newly constituted LDDI Executive Board, and speaking on behalf of the entire Board, it is our great pleasure to address you in this year's LDDI Annual Report. The flurry of activity surrounding all facets of LDDI over the past year is rivaled only by that seen during the program's infancy. Indeed, much like what occurred in those early years, this year we established a new organizational structure, created and began populating new committees, and initiated a rejuvenated and deliberate effort to increase the participation of program graduates and other industry professionals not previously involved with LDDI. These efforts coincided with Kevin and Claire further solidifying their roles as LDDI Coordinator and Assistant Coordinator, respectively, positions they assumed just over a year ago. The changes atop organizational leadership was not confined to LDDI, as the Via Department of Civil & Environmental Engineering appointed Dr. Mark Widdowson as Department Head in the spring of 2020. Over the past year, Kevin, Claire, and members of the LDDI Executive Board met frequently with Dr. Widdowson in an ongoing effort to align and advance the goals of LDDI and broader CEE. Of course we don't have to tell anyone reading this that all of this occurred under the shadow of a global pandemic and an academic year completed almost entirely through a virtual modality. We as members of the Executive Board sometimes observed in awe at how effectively (and, at least on the surface, seamlessly) Kevin and Claire moved their LDDI courses to the online delivery mode. Their commitment to the preservation of academic integrity and the high quality instruction for which LDDI is known, amidst the challenges imposed by the pandemic, is truly worthy of recognition. But the LDDI program doesn't end at the door of the physical or virtual classroom, and practitioner involvement events such as the annual Design Charrette, Young Professionals Panel, Career Night Mixer, and others were also effectively adapted to a virtual format. While 2020 may not be a year that any of us are eager to repeat, it is a year for which we can all reflect positively on the adaptability and robustness of the LDDI program. While many organizations, both inside and outside of academia, chose to simply hunker down over the past year, LDDI faculty, our industry partners, and this Board identified and successfully implemented ways to keep engaging land development practitioners with Virginia Tech CEE students.

We would also like to take a moment to thank the organizations and individuals who contributed financially to LDDI over the past year. To say that there was economic uncertainty when LDDI launched its annual sponsorship drive last summer would be a gross understatement. Yet, LDDI enjoyed the financial support of 40 corporate sponsors and municipal members. It can be said without hyperbole that this sponsorship revenue is the program's financial lifeblood, and directly supports classroom instruction and other vital program activities. The past year also featured the highest number of individual donors ever contributing to LDDI, with nearly 90 individuals making contributions on Virginia Tech's Giving Day alone. The LDDI Executive Board thanks all of the companies, municipalities, and individuals who supported LDDI financially over the past year.

We hope you will enjoy reading this year's Annual Report, including learning more about the new LDDI organizational structure. While we do envision this new model to be more efficient and nimble in responding to evolving and ever-changing program needs, an equally important catalyst for its creation was to provide an opportunity for LDDI graduates to remain involved following graduation, and to put before them a clear path to enter into and ascend upwardly through program leadership. As we eagerly look forward to Virginia Tech's return to normal this fall, we are excited for you to witness the positive impact of our "behind the scenes" efforts over the past year. Our support as a Board for Kevin, Claire, Virginia Tech and CEE leadership, and LDDI students remains unwavering, and we invite you to contact either of us to discuss how you can help support this unique program.



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MEET THE LDDI EXECUTIVE BOARD



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Alisa S. T. Cowen, LA, AICP
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Skip Notte, PE
Vice President/Business Unit Manager
Dewberry



Jack Vega, PE, DPE
Principal
Rodgers Consulting



Susan Wolford, PLA, AICP, LEED GA, ENV SP
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TABLE OF CONTENTS

LDDI Milestones	1
LDDI Coordinator Receives Certificate of Teaching Excellence	1
Sustainable Land Development M.S. Program	1
New Organizational Structure	3
Curriculum	6
Financial Summary	11
LDDI Industry and Networking Events	12
General Meetings	12
Golf Tournament	13
LDDI Lunchtime Updates/Outreach	14
Career Nights	15
Sustainable Land Development Club	16
Resume Review Workshop	16
Design Charette	17
Local Field Trip	18
Young Professionals Panels	19
Industry Professionals Panels	20
Guest Speakers	21
LDDI Faculty and Student Awards	22
How to Get Involved with LDDI	23
Practitioner/Technical and Research Committee	23
Special Events and Fundraising Committee	23
Membership Committee	23
Marketing and Public Relations Committee	23
Young Members Group	23
Corporate Sponsorship, Municipal Membership, and Individual Giving	24
Recognition of Sponsors and Donors	25
Dymond Level	25
Platinum Level	28
LDDI Gold & Silver Sponsors and Municipal Members	Back Cover
Multi-Year, Endowment Fund Pledges	Back Cover
LDDI Individual Donors	Back Cover



LDDI MILESTONES

LDDI Coordinator Receives Certificate of Teaching Excellence

Each year, Virginia Tech's College of Engineering awards four Certificates of Teaching Excellence in recognition of faculty who have demonstrated effective student learning, exemplary curriculum design, professional development, and impact beyond Virginia Tech. In 2021, three of the four award recipients are from the Civil and Environmental Engineering department, including LDDI Coordinator Kevin Young and his faculty colleagues Dr. Matt Eatherton and Dr. Eric Jacques. This year marks the third time that Kevin has been awarded a Certificate of Teaching Excellence from the College of Engineering (2015, 2018).



LDDI Coordinator Kevin Young oversees students during his Fall 2020 CEE Measurements Lab

LDDI students frequently cite Kevin's enthusiasm in the classroom as a source of their own emerging interest in land development design. **Danny**

Bertram, VT CEE Class of 2021, completed Kevin's Land Development Design course during the fall 2020 semester and had this to offer, *"The Land Development Design course taught by Professor Young was the most fulfilling class I have taken in my undergraduate career at Virginia Tech. The classroom environment cultivated by Professor Young allows students to feel like professional colleagues where we can creatively work together to design a successful project. Working with him and his GTA, as well as with our professional mentors, gave me such a sense of pride in every deliverable my group handed in. I am so grateful to have taken this class with Professor Young."*

With thousands of his former students now working in the industry, employers have also taken note of the passion that Kevin brings to the classroom. **Skip Notte**, Vice President and Business Unit Manager for Dewberry, and a member of the LDDI Executive Board states, *"During the 11 years that I have known Kevin, the one thing that has remained constant is his commitment to engaging and preparing Virginia Tech students for a lifetime of success. We have all heard so many stories about educators being tough but fair, thus earning the respect of each student. I have personally witnessed this time and again, as students consistently provide unsolicited feedback on Kevin that can only be explained as a sense of both pride and enthusiasm as they work diligently to deliver their best response possible to each assignment. It is truly a joy to watch him inspire each student."*

Sustainable Land Development M.S. Program

As announced in last year's Annual Report, the Charles E. Via, Jr. Department of Civil and Environmental Engineering approved a new Master of Science program in sustainable land development in Spring 2020. This program will provide opportunities not only for students interested in land development but also those who are interested in an interdisciplinary civil engineering degree. Dr. Tripp Shealy, VT CEE Associate Professor, serves as the coordinator for the graduate program and worked closely with Dr. Randy Dymond, VT CEE Professor Emeritus, to establish the M.S. program prior to his retirement in Spring 2020. Dr. Shealy has continued to collaborate with Kevin Young, Claire White, and LDDI over the past

year in further developing the program. We are excited to welcome the first four graduate students in the program this upcoming fall semester, three of whom are former LDDI students who will continue their studies at Virginia Tech.

As with the other Master of Science in civil engineering degrees, the program will require 30 credit hours which includes three core LDDI courses – Land Development Design, Sustainable Land Development, and Municipal Engineering – plus 21 credits of electives inside and outside of CEE as determined by the student and approved by their advising committee. Also similar to other master's programs, students may choose between thesis, project and report, and coursework only options. Additionally, up to 50% of the coursework can be completed outside of Virginia Tech's Blacksburg campus, opening up greater flexibility for students and professionals alike to enroll in the program. Students will have the opportunity to engage in sustainable land development research as well as experience the involvement of industry practitioners that is a staple in LDDI's undergraduate curriculum.

The goal in establishing this new graduate program is for Virginia Tech to become nationally recognized for our students advancing sustainable land development. We see great opportunity for growth through this graduate program. No similar programs exist at the graduate level in civil engineering across the country. We recognize that sustainable land development involves knowledge and skills that span multiple disciplines within and outside of civil and environmental engineering and have designed the master's degree to foster this type of interdisciplinary thinking. The program is unique within the Department and nationally, because it opens up opportunities for students to explore how sustainability, planning, and engineering design work together. Students will graduate ready to contribute to conceptual design, comprehensive planning, grading, erosion and sediment control, and stormwater management processes. They will also be able to articulate to clients the effects of particular types of development on transportation, utility, social-economic, and environmental systems. Through this advanced degree, students will be exposed to unique projects and case studies, which will help them foresee the potential barriers to sustainable land development and equip them with tools to help overcome these barriers. Incoming graduate student **Gia Ha** offered, *"This program aligns with my passions about community, innovation, and social impact. I hope to pair my dual master's degrees in civil engineering and urban and regional planning to learn how to meet the challenges of a changing global landscape, where climate change and urbanization drive the need for innovative engineering as well as sustainable infrastructure planning and policy."* Gia completed her B.S. in civil engineering at George Mason University and has worked in industry for the past year.



We intend for the number of graduate courses related to sustainable land development and the flexibility of these course offerings at Virginia Tech to grow. The first initiative of this growth is through an online graduate certificate in sustainable land development. We are presently in the initial phases of creating an online certificate related to sustainable land development and anticipate this will be available starting Fall 2022. This online certificate is intended for professionals wanting to learn more about the evolving practice of sustainability applied to land development and how the practice of land development can become even more responsive to the ever-changing demands of society.

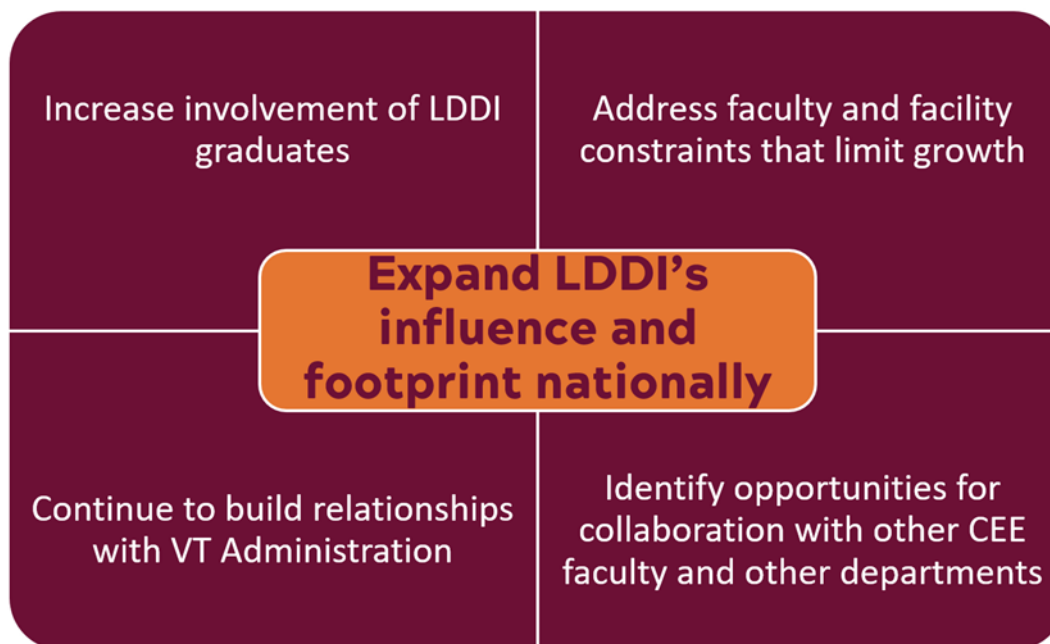
The certificate will include four online courses through Virginia Tech. The courses will be professionally produced with support from the College of Engineering. We are now outlining the course offerings, course objectives, case studies, and projects for this certificate. Courses will likely include modified versions of our current successful graduate courses, Advanced Sustainable Land Development (CEE 5264) and Advanced Municipal Engineering (CEE 5254). We are also developing a new course called Infrastructure Development. The first case studies for this course will include development around Charlotte's light rail, a road diet and urban trail in Indianapolis, green infrastructure for stormwater management in Cincinnati, and Raleigh's nearly two-decade Hillsborough Street Renewal project. The certificate can also be viewed as a stepping stone if a professional is interested in continuing their professional development in pursuit of an eventual graduate degree. Coursework completed as part of the certificate program can be applied toward a master's degree.

We are also excited to introduce a fall seminar series for both the new graduate students as well as the LDDI professional network. The fall seminar will be held via Zoom on Friday afternoons and feature a variety of speakers and topics including low-impact development, adaptive reuse projects, transit-oriented development, and creative strategies for public engagement. Unlike other graduate program seminars, we are inviting professionals to participate with the graduate students to attract higher profile speakers, earn PDHs, and provide a networking opportunity for our graduate students. More information will be forthcoming late Summer 2021.

Similar to our undergraduate courses, LDDI industry partners will play a critical support role in the graduate program. Through core courses, LDDI industry members will help us introduce professional and industry norms, standards, and evolving trends, while providing students with valuable mentorship. This past spring, Eden & Associates, J2 Engineers, and Whitman, Requardt & Associates provided mentoring for final projects in our graduate course, Infrastructure Development. We also anticipate the opportunity for the LDDI network to review and provide input on the graduate student's final master's projects and research. Lastly, LDDI's industry partners are a big reason why the College is willing to support the professional production of an online certificate program in sustainable land development. We continue to welcome feedback on the certificate program to develop a suite of courses that is valuable to the industry.

New Organizational Structure

Independent of a global pandemic, 2020 was already destined to be a period of transition for the LDDI program. In May of 2020, long-time LDDI Coordinator Dr. Randy Dymond entered into a well-deserved retirement, while Dr. Mark Widdowson was appointed as CEE Department Head following nearly a year's service in that role in an interim capacity. These changes in program and departmental leadership, and a recognition that LDDI was then in its 15th year of existence, served as the catalyst to initiate what resulted in a nearly year-long strategic planning effort. The primary goals of this effort included successfully navigating the aforementioned changes in program and departmental leadership, and ensuring that the program was on a track for sustained growth and success as it approaches the completion of its second decade of existence. Strategic planning efforts began in May 2020 with the hiring of an external consultant (Leadership Fairfax) and a virtual strategic planning retreat led by that company's president and CEO, Karen Cleveland. The outcome of this retreat was the identification of the following five program goals:



A second strategic planning retreat was held in October, and following that retreat a draft strategic plan was prepared by the Leadership Fairfax team. Beginning early and continuing throughout much of the spring 2021 semester, LDDI Coordinator Kevin Young, Assistant Coordinator Claire White, Advisory Board Chair Sue Wolford, and Advisory Board Vice Chair Jeff Gilliland met weekly to refine and begin implementing the plan. It

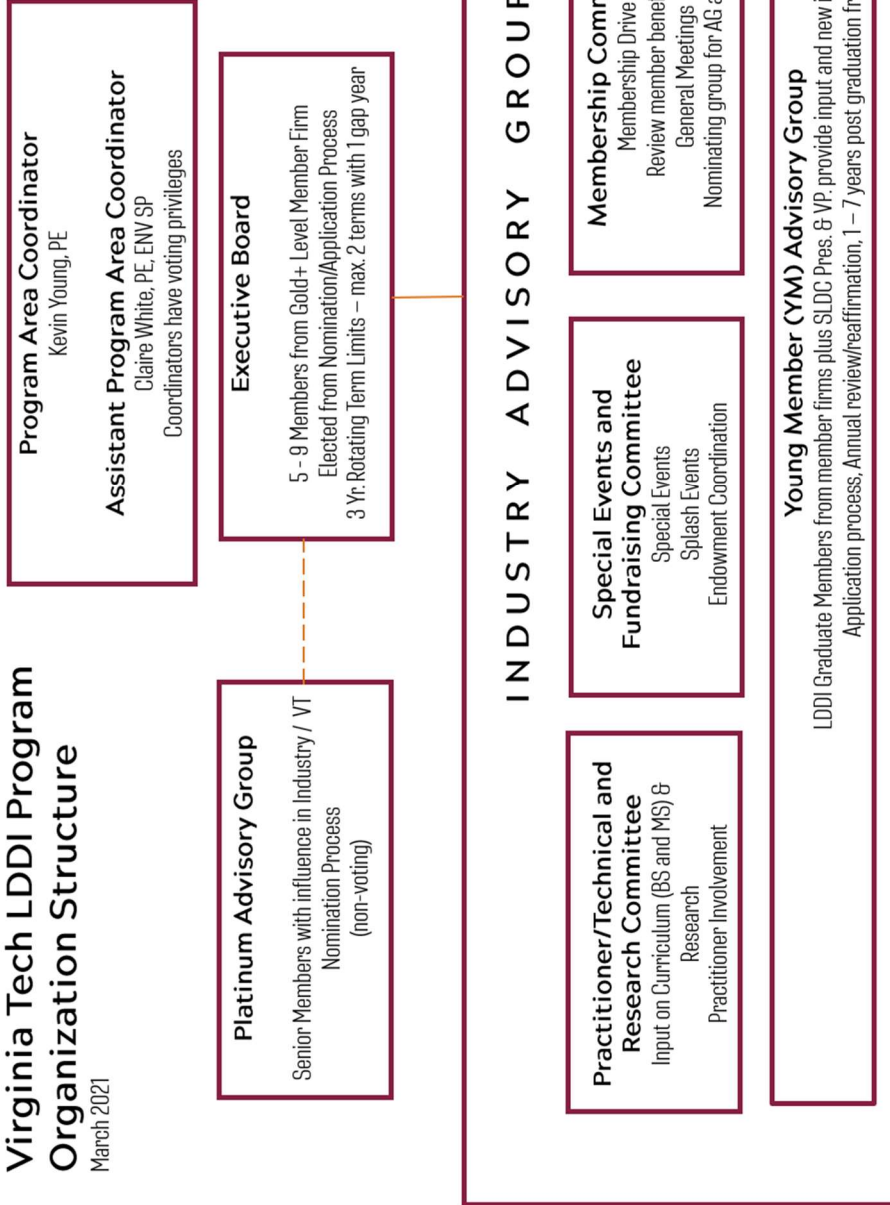
became evident early during these meetings that, along with implementing the new strategic plan, it was also time to look critically at the existing LDDI Advisory Board structure that had existed since 2007, and to update and reconfigure this organizational model to address current and future program needs. Specifically, the group sought to develop an organizational structure that was efficient and able to nimbly respond to program needs and emerging industry trends, and also to provide an opportunity for graduates of the LDDI program to not only enter into program leadership but to have a path to ascend through the leadership ranks. Input on the new organizational structure was solicited from then-current Advisory Board members through what must have seemed to them like countless surveys. These surveys provided respondents with an opportunity to not only share their vision for the new organizational model, but to also express their own desired level of time commitment, involvement, and responsibility. These efforts culminated in March with the adoption of the new LDDI organizational model and installation of the inaugural Executive Board.

As shown in the organizational chart on page 5, LDDI's new organizational model features an Executive Board comprised of 5-9 members, all of whom, along with the Program Coordinator and Assistant Coordinator, have voting privileges on program direction and decisions. In the new organizational hierarchy, four separate committees exist in aggregate as a non-voting Industry Advisory Group and report to the Executive Board, with an Executive Board member assigned to serve as a liaison to each committee. These new committees – Practitioner/Technical/Research, Special Events and Fundraising, Membership, and Marketing and Public Relations – supplant LDDI's former committees (Practitioner Involvement, Curriculum and Course Enhancement, Outreach, and Research). Beneath the Industry Advisory Group is the Young Members Advisory Group, fulfilling the goal of providing a means for recent LDDI graduates to become involved in program leadership. LDDI's new organizational structure retains the Platinum Advisory Group, a group of senior, prominent members in the land development industry.

As of the date of this publication, the new Executive Board is comprised of Chair Jeff Gilliland (J2 Engineers), Vice Chair Alisa Cowen (Cowen Design Group), Skip Notte (Dewberry), Jack Vega (Rodgers Consulting), and Sue Wolford (Pennoni). We are currently working to populate membership in the four new committees forming the Industry Advisory Group in addition to the Young Members Group, and invite you to contact Kevin Young or Claire White if you are interested in becoming involved and serving on one of these committees.

Virginia Tech LDDI Program Organization Structure

March 2021



CURRICULUM

The 2020-21 academic year at Virginia Tech was unquestionably one of, if not *the* most unique in the university's long history. The picturesque Blacksburg campus remained largely quiet, in stark contrast to the typical scene around Lane Stadium on a Saturday afternoon in the fall, or on the Drillfield when the first glimpse of warm weather peeks out in early March. The experience at Virginia Tech was not unique, as other institutions of higher learning across the United States and the world grappled with how to continue delivering a quality education and all of the other experiences of university life for students, while simultaneously adhering to limitations on in-person gatherings and other public safety measures. Reflecting back, the abrupt move to fully online instruction that occurred during the spring 2020 semester provided an invaluable learning experience that helped to prepare LDDI instructors for what was to come during the 2020-21 academic year. The lessons learned during the second half of the spring 2020 semester, along with a summer to prepare for the coming academic year, provided an opportunity to restructure LDDI courses in a way that sought to preserve, and in some cases, even increase practitioner engagement in the new, virtual classroom. In summary, the 2020-21 academic year featured five individual LDDI courses, offered across a total of eight course sections. These courses, all of which were delivered in a virtual modality, were taught by a mix of LDDI faculty and adjunct, practitioner instructors. Beginning in last year's Annual Report, we presented our curriculum update from the perspective of a Virginia Tech CEE student navigating through their undergraduate curriculum. We continue that theme this year, and the following sections describe the five individual LDDI course offerings, and how they looked during the 2020-21 academic year at Virginia Tech.

CEE 3274 – Introduction to Land Development Design is the first LDDI course offering available to Virginia Tech students, and LDDI Coordinator Kevin Young and Assistant Coordinator Claire White typically teach a section of the course each semester (due to atypical circumstances, only one section was offered during the Fall 2020 semester). The course itself spans a wide diversity of topics, including issues of sustainability, government regulations and economic issues that impact the land development industry, and more traditional CEE subject matter including transportation design, fluid mechanics and hydrology, grading, and erosion and sediment control. Of perhaps equal importance to the course's material content, CEE 3274 provides a semester-long opportunity to make students aware of various career opportunities in the land development industry. For many students, CEE 3274 sparks an interest in land development and equips them with the fundamental skills that prepare them for more advanced LDDI course offerings.

Beginning with the second half of the spring 2020 semester, and continuing through the fall 2020 semester, Kevin and Claire worked collaboratively to produce approximately 30 "on-demand" videos spanning the entirety of the course's diverse subject matter. These videos include traditional lectures, step-by-step computational design examples, and even Civil3D and GIS tutorials. Next, they looked at how these videos could be strategically integrated into the chronology and structure of the existing course such that guest presentations from industry professionals would directly compliment and expand upon this course material. An example of this was requiring students to watch a pre-recorded video on a course topic and complete an online quiz before having an industry professional deliver a live, synchronous lecture on that same topic, often in the context of one of the speaker's own projects. The result was not only a continuation of the student-practitioner interaction for which LDDI is so well known, but also a more engaged and conversational student audience during those practitioner visits. In total, the fall 2020 semester featured eight practitioner lectures while the spring 2021 offering of the course featured six guest lectures.

"My only negative sentiment toward the Introduction to Land Development course is that it wasn't available when I was a student; I was subjected to the rigorous design course without a solid base! It's been a pure joy to virtually participate in the introduction course over the past year and see so many engineering students interested in land development. Claire and Kevin do a wonderful job putting the material into a context that's easy for any student to appreciate, regardless of prior coursework or work experience. Many students elect to take advanced Land Development courses which is a testament to the success of the LDDI program and its mission to shape aspiring engineers into prepared, employed professionals the day after (and often before) graduation."

-Jessie Ponce de Leon, P.E., Managing Member, Gordon

Kevin and Claire intend to continue utilizing their catalog of videos and newfound skills in the virtual world even with the anticipated return to in-person instruction this fall. The pandemic thrust these changes upon us, but it's been an eye-opening experience and the outcome is a lot of new and effective tools in the LDDI instructional toolbox.

As the oldest LDDI course, predating even the creation of the LDDI program, **CEE 4274 - Land Development Design**, is in many ways the crown jewel of the LDDI curriculum. The course is one of eight accredited ABET design courses within the CEE curriculum and the only LDDI course holding the "design course" designation. Every CEE student must successfully complete at least one design course to obtain their Bachelor of Science in civil engineering, and for those students whose interest in land development design was first sparked in CEE 3274, CEE 4274 often

"Since 2006, I have had to pleasure of mentoring numerous teams taking the LDDI design course. Each semester, I bring a different site with unique challenges and opportunities to learn more about land development design; and each semester, the students rise to the challenge as they take the site from concept through design. We have found that graduates with LDDI class experience are more prepared and often come with an enthusiastic approach to land development.

As part of their efforts to make the best of the remote classroom environment, Kevin and Claire increased practitioner involvement in their classes. While the students in the design course were working on the grading module, Kevin invited me to class to offer tips on grading. I showed them what I consider to be the key elements of the land development engineer's free body diagram for grading a site. It started with boundary constraints and progressed through setting spot shots that would help them think through an initial grading concept. As students return to campus this fall, it's great to know that our practitioners can have a tremendous impact on them whether in-person or through a virtual platform."

-Jeff Gilliland, P.E., Principal, J2 Engineers

satisfies that role. Since the fall 2006 semester, students taking CEE 4274 have worked in teams of three or four, and been paired with practicing engineers from LDDI sponsoring firms who serve as mentors on a semester-long group design project. This design project is completed across five learning modules, the last of which is an oral presentation of the semester's cumulative design effort. The material content of CEE 4274 closely parallels that of CEE 3274, but is delivered to and applied by students in a substantially different way. In CEE 3274, like many traditional courses, students complete homework and other educational activities utilizing given data and information that allows for a consistently repeatable, usually singular, solution. By paring student design teams with professional mentors, and having them work on real-world projects, CEE 4274 presents students with the challenge of designing in an environment for which all input variables are not known, and for which assumptions and subsequent design iteration is required. While an arguably subtle distinction between the two courses, this denotes a critical evolutionary step for LDDI students, as their skills not only grow, but begin to develop in a way that prepares them for entry into the professional world. Nearly all students who complete CEE 4274 will also take a second or even third senior-level LDDI course.

First introduced to the LDDI curriculum in 2010, **CEE 4254 – Municipal Engineering** was initially taught in the spring semester of alternating years. Beginning in 2019, the course is now taught every spring semester. Unlike CEE 3274 and CEE 4274, Municipal Engineering is not focused on building and developing students' design skills. Rather, the course seeks to familiarize students with the role of the municipal engineer and the important relationship that exists between municipal engineers and the land development industry. The spring 2021 offering of the course was taught by Matt Stolte (Town of Blacksburg) for the second straight year, and he delivered content through four major course modules:

- Municipal Engineering Finance and Planning
- Municipal Infrastructure, Capital Construction, Systems Operation, and Engineered Life Cycles
- Infrastructure Management Concepts, Tools, and Programs
- Research, Organization, and Presentation of Preliminary Engineering Projects.

The course also features many guest speakers and municipal engineering mentors from across Virginia who work directly with students on projects. LDDI graduates who have completed CEE 4254 will often cite the course as a strong compliment to CEE 4274, noting the value in having a more comprehensive understanding of both the private and public players in the land development arena.

"It was an honor and personally rewarding to be part of the spring 2021 LDDI program as an adjunct instructor, in conjunction with Kevin Young, and James Patteson, for the Municipal Engineering CEE 4254 course. The municipal engineering class is exciting to be part of because it allows students to explore the nexus between private site development projects and municipal engineering."

- **Matt Stolte, P.E.**, Assistant Director – Management, Town of Blacksburg Public Works

Like CEE 4254, another course frequently cited by graduates as a strong compliment to LDDI's design course is **CEE 4264 – Sustainable Land Development**. First introduced to the curriculum as a one-credit seminar in 2008, its immediate popularity served as a catalyst to rapidly expand the course to a full three-credit offering, now taught every fall semester. While many students choose to take CEE 4264 in combination with other LDDI courses to strengthen and broaden their overall land development knowledge base, CEE 4264 enrollment also includes students with interests other than land development, but for whom there is a general interest in issues of sustainability. CEE 4264 focuses on the developed site's long-term sustainability and preservation of pre-development environmental quality. Specific topics include:

- site selection and linkage
- neighborhood pattern and design
- development impacts on water, air, and soil
- microclimate; industrial ecology and materials
- energy
- incentive driven sustainability efforts

The course also introduces students to third-party site evaluation methods including Leadership in Energy and Environmental Design for Neighborhood Development (LEED ND), Envision, and Earthcraft Communities. CEE 4264 features a number of outside guest speakers who deliver presentations on timely and emerging topics. Even amidst the COVID-19 pandemic and a predominantly virtual fall semester, the students were still provided an opportunity for a walking field trip at a local development project, The Village at Tom's Creek, that features sustainable design features. This site visit was led by Meredith Jones, Vice President of Eden & Associates and former instructor of CEE 4264.

"The Sustainable Land Development class introduces students to the challenge of designing today to meet the needs of the present without compromising the ability of future generations to meet their own needs. Sounds a little overwhelming, but through the introduction of a variety of sustainable evaluation tools and rating systems, these young engineers begin asking important questions about design elements related to buildings, infrastructure and communities. As these future engineers go out into the professional world, they are better prepared to tackle the challenging issues of sustainability within the field of land development."

- **Sue Wolford, PLA, AICP, LEED Green Associate, ENV SP**, Regional Vice President, Pennoni

Rounding out the LDDI curriculum, and for those students who are fully committed to pursuing a career in land development design, there is **CEE 4284 – Advanced Land Development Design**. First offered to students in 2007, and now taught during the spring semester of alternating years, CEE 4284 is unique in that it is taught in its entirety by teams of professional engineers from LDDI sponsoring firms. The course is also unique in that it has historically employed a non-traditional course schedule, meeting on Friday nights and Saturday mornings. This arrangement is necessary to accommodate the schedules of the industry professionals serving as course instructors, many of whom are traveling from several hours away to teach. Like all LDDI courses during the 2020-21 academic year, CEE 4284 was delivered to students virtually, with class meeting for approximately three-hours each Thursday evening. LDDI thanks the professionals from Bohler, Draper Aden Associates, and Kimley-Horn who gave so generously of their time to teach the spring 2021 offering of CEE 4284.

Teaching the Advanced Land Development course each time that it has been offered since its inception has really been enjoyable for me. You get the best of the best students, and mentoring/teaching them as they are about ready to go into their careers has been very rewarding. Having some of them communicate back with me after they are working, as has happened frequently, and tell me I was the reason for them continuing on into land development as a career is quite an ego booster. I am also very proud to be a part of a landmark program started, continuing, and growing with lots of support from VT grads and the engineering community in general. I really do appreciate the opportunity to teach and make a difference in these young engineers' lives."

-Randy Royal, P.E., Principal, Kimley-Horn

To enroll in CEE 4284, students must have previously completed, or be concurrently enrolled in, CEE 4274. This pre/co-requisite requirement permits coverage of more advanced and/or specialized land development topics, including:

- site selection, due diligence, and entitlements
- the Virginia Runoff Reduction Method
- floodplains
- design-build, public-private partnerships, and non-traditional project delivery methods
- infill development and development challenges in urban environments
- professional communication and networking

Students completing CEE 4284 are some of the most sought after by employers, as they are not only conversational in these topics, but also have a basic proficiency in their application. CEE 4284 will be next offered again during the spring 2023 semester.

"The LDDI program has prepared me exceptionally well for professional practice with the senior design course that challenged my comprehensive knowledge and skills. During many encounters with professionals at networking events, they praise this program saying students become well-equipped for industry. I always looked forward to the events held throughout the school year with alumni to answer questions about the typical work day, graduate school, and company details. These alumni events have introduced me to several companies who have offered interviews, internships, and a full-time job! In addition to the alumni support, the faculty have also been welcoming to my questions or have pointed me to somebody who would be beneficial in my network. This program has accelerated my career by learning about industry practices, enlarging my network, and offering support in every direction!"

- Charlyn Castillo, CEE Class of 2021, Project Engineer I, Timmons Group

We would like to thank the following individuals and organizations for their guest lectures and mentorship in LDDI courses during the last academic year. Thank you for helping to enrich our students' educational experience!

Intro. To Land Development Mentors

- ATCS
- Bohler
- Bowman
- christopher consultants
- Draper Aden Associates
- Dewberry
- Edens Land
- GORDON
- J2 Engineers
- Kimley-Horn
- McAdams
- Timmons Group

Infrastructure Development

- Eden & Associates
- J2 Engineers
- Whitman, Requardt & Assoc.

Land Development Design Mentors

- ADS
- ATCS
- Bohler
- Bowman
- christopher consultants
- Draper Aden Associates
- Dewberry
- Edens Land
- GORDON
- J2 Engineers
- Kimley-Horn
- McAdams
- Pennoni
- Timmons Group
- Tri-Tek
- WithersRavenel

Municipal Engineering Mentors

- American Public Works Association
- City of Alexandria
- City of Hampton
- City of Richmond
- City of Roanoke
- City of Salem – Water Department
- City of Williamsburg
- Clark Nexsen
- Fairfax County
- Fairfax Water
- VHB

Guest Speakers

- Matthew Adams, Fairfax County
- Tushar Awar, Gorove Slade
- Jim Bishop, J2 Engineers
- Sandy Camargo, ADS
- Michael Cardman, Bowman
- Carol Davis, Town of Blacksburg
- Jeff Gilliland, J2 Engineers
- Lindsey Geiger, Institute for Sustainable Infrastructure
- Elizabeth Grant, VT College of Architecture and Urban Planning
- Suzy Harding, Fairfax County
- Meredith Jones, Eden & Associates
- Trevor Kimzey, Gay & Neel
- Amy Linderman, Fairfax County Park Authority
- Gabby Mikuria, Fairfax County
- Joshua Middleton, Town of Blacksburg
- Alexander Morrison, Albemarle County
- Allyson Monsour, Clark Nexsen
- Skip Notte, Dewberry
- Jessie Ponce de Leon, GORDON
- Greg Schmitt, Kimley-Horn
- Scott Smith, City of Hampton
- Justin St. Clair, Town of Christiansburg
- Ross Stilling, Fairfax Water
- Eric Wiseman, VT College of Natural Resources
- Sue Wolford, Pennoni

FINANCIAL SUMMARY

During the 2020-2021 fiscal year, LDDI enjoyed the financial support of 40 corporate sponsors and municipal members. These memberships/sponsorships generated just over \$190,000 in program revenue that was used to directly support LDDI activities inside and outside of the classroom. The following describes some of LDDI's major expense categories toward which this revenue has been directed over the past year (and historically):

- *Instructional Support:* Nearly all Professor of Practice appointments at Virginia Tech are funded by external sources. Of the eight (or nine) LDDI course-sections offered each year at Virginia Tech, revenue from corporate sponsorships and municipal memberships funds five or six course sections in their entirety.
- *Program Expenses:* Program expenses include support for the Sustainable Land Development Club (SLDC), including field trips, travel to service project locations, and catering for after-hours guest speakers and other events. This expense category also includes event catering for LDDI general and outreach meetings, publication of the LDDI Bridges bi-monthly newsletter, and publication of the LDDI Annual Report.
- *Operations Expenses:* Operations expenses include general overhead costs including postage, printing and copying, telecommunications, and university accounting and service fees.
- *Travel and Meetings:* While the pandemic interrupted normal operations over the past year, LDDI has historically hosted three general membership meetings each year. Outreach efforts such as these comprise a critical part of LDDI's efforts to ensure continued practitioner participation in the program.

LDDI also benefitted greatly this year from Virginia Tech's Giving Day. Giving Day is a 24-hour celebration of the Hokie Spirit that provides an opportunity for students, alumni, employees, family and friends to come together and show support for their favorite Virginia Tech organization. Held February 24-25th, this was Virginia Tech's third Giving Day, and the first since 2019 as the pandemic forced the postponement of the 2020 event. When Giving Day closed this spring, LDDI had received a total of 81 individual donations, ranking 9th among *all* organizations and departments in the entire College of Engineering! The good news doesn't end with the high number of individual donors. Each of the first 60 donations made to LDDI on Giving Day, regardless of their amount, was matched with \$250 for a total matching amount of \$15,000. LDDI offers special thanks to Caleb Hurst (Draper Aden Associates) and Sue Wolford (Pennoni) for spearheading and organizing LDDI's Giving Day match, and we also recognize the following individuals for their generous contributions that made this match possible:

- | | | |
|----------------------|-----------------------|-----------------------|
| ▪ Mr. Kyle Bollinger | ▪ Mr. Andy Gorecki | ▪ Mr. Skip Notte |
| ▪ Mr. Derrick Cave | ▪ Ms. Suzy Harding | ▪ Mr. James Patteson |
| ▪ Mr. Young Ho Chang | ▪ Mr. Caleb Hurst | ▪ Mr. Rick Rabil |
| ▪ Ms. Alisa Cowen | ▪ Mr. Bob Jansen | ▪ Mr. Tom Rust |
| ▪ Mr. John DeBell | ▪ Mr. Paul Johnson | ▪ Mr. Brian Utterback |
| ▪ Mr. Sid Dewberry | ▪ Ms. Meredith Jones | ▪ Mr. Jack Vega |
| ▪ Mr. Louis Genuario | ▪ Mr. Jeff Lighthiser | ▪ Mr. Adam Volanth |
| ▪ Mr. Jeff Gilliland | ▪ Mr. Kevin Murray | ▪ Ms. Sue Wolford |

LDDI INDUSTRY AND NETWORKING EVENTS

General Meetings

Over the past year, LDDI hosted three virtual General Meetings in June, January, and April. In addition to the thematic content of the meeting, LDDI General Meetings serve an important outreach function, keeping sponsors and other professionals in the land development industry informed of program activities both inside and outside of the classroom through the overview presentation delivered by LDDI Coordinator Kevin Young. The meetings also provide a great opportunity to showcase students, with this year's meetings featuring presentations from the senior design course, Sustainable Land Development, and Municipal Engineering. Another important outreach component of the meetings is the networking opportunity amongst a diverse mix of attendees that includes consulting engineers, developers and homebuilders, product and service providers, municipal engineers, and others from the land development industry. While this networking opportunity is significantly limited in a virtual environment, we were able to incorporate breakout rooms during the April meeting, and are looking forward to joining you again in person this upcoming year.

LDDI's 2020 summer meeting was held on Friday, June 19th, 2020 and featured an impressive panel of speakers representing both municipal governments and private consulting firms to discuss *"The Impact of the COVID-19 Pandemic on the Land Development Industry."* The panelists highlighted how their organizations had to adapt quickly to a mostly or completely remote work environment and discussed how they were able to continue to be effective in their respective roles and responsibilities. Additionally, they offered some thoughts regarding adaptations that are translatable to the post-COVID workplace.



SketchUp model from senior design team mentored by Bohler, presented at Summer 2020 General Meeting



Proposed rendering of Dorothea Dix Park
(photo provided by City of Raleigh)

LDDI's annual winter meeting was held on Friday, January 8th, 2021. The theme of the 2021 winter meeting was *"Envision"* and featured a panel of guest speakers with representatives from the public sector, private sector, and academia. Lindsey Geiger, Director of Education at the Institute for Sustainable Infrastructure, provided an overview of Envision, followed by four case studies from our other panelists. Dr. Mark Widdowson, VT CEE Department Head, also provided a departmental update.

LDDI's third General Meeting was held on Friday, April 9th, 2021 with a featured topic of *"The City of Raleigh, NC's Dorothea Dix Park."* The guest speakers included City of Raleigh Planning and engineering consultants who completed both the due diligence and design phase work for the project. Dorothea Dix Park is a signature park near NC State's campus and a multi-phase project with many more improvements to come in future years. Additionally, Josh

Trump, PhD student advised by Dr. Tripp Shealy, presented case studies developed as part of his master's degree thesis, which was a great showcase of the type of research LDDI can expect from the new sustainable land development master's program.

We would like to recognize the following guest speakers for their contributions to LDDI General Meetings in the past year. Thank you for your role in maintaining outreach with our general membership!

- Darren Conner, Dewberry
- Alisa Cowen, Cowen Design Group
- Alyson Craig, City of Charlotte
- Carol Davis, Town of Blacksburg
- Joe Emerson, Henrico County
- Joanne Gabor, Arlington County
- Lindsey Geiger, Institute for Sustainable Infrastructure
- Sean Gleason, McAdams
- Matt Johnson, City of Newport News
- Allyson Monsour, Clark Nexsen
- Robert Moore, City of Portsmouth
- Kate Pearce, City of Raleigh
- Rob Reddick, McAdams
- Dr. Tripp Shealy, VT CEE
- Josh Trump, VT CEE
- Matthew Villareale, Prince William County
- Adam Volanth, Bohler
- Patrick Wade, Dewberry
- Dr. Mark Widdowson, VT CEE
- Laurel Xiao, Fairfax County

Golf Tournament

On Thursday, September 24th, LDDI, Inc. hosted the sixth annual Land Development Professionals Golf Tournament at the Potomac Shores Golf Club in Dumfries, VA. LDDI, Inc. is an IRS-recognized 501(c)(3) non-profit organization whose purpose is to help financially support the goals and mission of the broader LDDI program. The golf tournament is LDDI's single biggest individual annual fundraiser, and this year's event featured 19 corporate sponsors and 87 golfers, setting a new event fundraising record. LDDI Executive Board Vice Chair **Alisa Cowen** (Cowen Design Group) states of her involvement with the event, *"The annual LDDI, Inc. golf tournament is so much more than an essential fundraiser for the LDDI program, it is an opportunity to focus on relationships with peers and professionals from other firms who share the Hokie heritage and passion to serve. Plus it's a great and challenging golf course. Even though I don't play golf I thoroughly enjoy connecting with all of the golfing engineers and their guests. A limited number of golf teams can be accommodated so be sure to sign up early!"*

Jim Bishoff (J2 Engineers) and Sue Wolford (Pennoni) served as the primary event organizers, and LDDI sincerely thanks them, as well as everyone who contributed their time and energy to making the event a success. We also thank all of the corporate sponsors and event participants, and we hope you enjoyed a great day on the course. Please save the date and plan to join us on Wednesday, September 15th for this year's tournament!



Jim Bishoff (J2 Engineers) presents the Men's Longest Drive award to Jim Clark (Advanced Drainage Systems) at the 2020 Land Development Professionals Golf Tournament

LDDI Lunchtime Updates/Outreach

Perhaps the one factor that distinguishes LDDI from other academic programs and curriculums more so than any other is the extent to which industry professionals are engaged with students. Whether serving as guest lecturers or design project mentors in the classroom, hosting a field trip on an active construction site, or leading the annual Design Charrette and Value Engineering workshops, student-practitioner interaction is a foundational element of the LDDI program. Maintaining a large, enthusiastic pool of professionals willing to give so generously of their time and resources in this way necessarily requires continual outreach to and communication with the industry. While this outreach occurs in various ways, historically our winter meeting in NOVA, summer meeting in Richmond and, more recently, a spring meeting in Charlotte have primarily satisfied this role. The pandemic forced us all to adapt the manner in which we gather and collaborate with others, and over the past year all three of these meetings were held virtually. In an effort to recover some of what was lost in the transition from in-person to virtual meetings, and also to maintain and strengthen the ties between LDDI and our industry partners, last fall LDDI debuted a new series of virtual meetings. Promoted as “lunchtime updates” or “coffee with LDDI,” these hour-long sessions began with an LDDI update delivered by Kevin and Claire, and then featured guest speakers talking about topics complimentary to LDDI. In total, five of these update/outreach meetings were held, three in the fall semester and two in the spring.

LDDI thanks the following individuals for their participation in these lunchtime updates over the past year:

- September 2020: **Morgan Newcomb**, Sustainable Land Development Club (SLDC) President, and sustainable land development M.S. student
- October 2020: **Dr. Tripp Shealy**, Assistant Professor, Virginia Tech CEE Construction Engineering and Management
- December 2020: **Dr. Kevin Boyle**, Willis Blackwood Director, Virginia Tech’s Program in Real Estate
- February 2021: **Kyle White**, Capital Construction Manager, Virginia Tech Facilities
- March 2021: **Josh Trump**, Ph.D. student and BioBuild Fellow

While we are thrilled to see a return to in-person gatherings on the horizon, these sessions provided valuable touch points between LDDI and our industry partners last year, and moving forward we plan to continue hosting them.



**LDDI
Lunchtime Session**

**We invite you to join us, via Zoom,
for lunch on Friday, December 4th
from 12:30-1:30pm**

- *Final fall semester program update*
- *Look ahead to spring 2021 semester*
- *Guest presentation: Dr. Kevin Boyle, Willis Blackwood Director of Virginia Tech’s Program in Real Estate*
- *Open Q&A*

**No RSVP or pre-registration is required!
Join by simply clicking [HERE](#).**

LDDI’s new lunchtime update and coffee with LDDI sessions provided additional touch points during the 2020-21 academic year.

Career Nights

Fall 2020 and Spring 2021 marked the 22nd and 23rd consecutive semesters that LDDI hosted “Land Development Career Night” – a professional networking event held on the eve of the Civil & Environmental Engineering Career Fair. Typically held at the Hokie House in Blacksburg, these mixers have long provided an opportunity for students to meet and mingle with prospective employers in a relaxed environment prior to the stressful and sometimes even chaotic atmosphere of the career fair. Employers often cite the event’s value in helping them to identify and distinguish students interested in land development design from the larger pool of CEE candidates. The pandemic related challenges of the 2020-21 academic year forced LDDI to think outside of the box in order to continue this valued networking event. Both the fall 2020 and spring 2021 LDDI Career Night Mixers were held in a virtual format via the online platform *Remo*. In *Remo*, representatives from LDDI sponsoring organizations occupied private rooms where they hosted student attendees. Students were able to move freely from room to room, and upon entry to a room they could then video chat with the employers. While perhaps not quite as fun and personal as the Hokie House, the *Remo* platform served to effectively connect students with recruiters in advance of the CEE Career Fair held the following day. University Relations Specialist **Rebecca Kaze**, from LDDI Dymond-level sponsor Bohler states of the mixer, *“The Career Night Mixer is always one of Bohler’s favorite events of the recruiting season. It’s not often that we’re in a room full of students interested in a career in land development, and we love getting to know them in a casual, more personal setting. We’re looking forward to being back in person soon!”*



Career Night Mixers are open to all CEE students, as well as representatives from LDDI sponsoring organizations at all levels. We are looking forward to once again hosting the event in person during the fall 2021 semester.

“All of the LDDI courses taught me so much and sparked my interest in the industry. After completing the design course (CEE 4274) and Sustainable Land Development (CEE 4264) along with a couple internships, I realized that I wanted to go beyond just taking classes and dig deeper into how we design our environment and research ways it can be improved to become more sustainable and resilient. Land development is a unique industry that encompasses other branches and disciplines of civil engineering. Traditional graduate programs tend to focus exclusively on one of these other other disciplines, but the new sustainable land development master’s program will allow me to integrate these different disciplines in the specialized context of land development from a sustainable point of view.”

– **Akul Mehra**, CEE Class of 2021, member, inaugural cohort of SLD MS students

SUSTAINABLE LAND DEVELOPMENT CLUB

Founded in 2008, the Sustainable Land Development Club (SLDC) is the student “arm” of LDDI, and has grown to be one of the most active student organizations in all of CEE. LDDI Coordinator Kevin Young has served as the club’s faculty advisor since its inception, and throughout the club’s history he has consistently tapped into the vast LDDI network to provide students with multiple opportunities each semester to meet and network with professionals in the land development industry. The pandemic forced many changes in the way we all do things, and LDDI and the SLDC necessarily had to adapt in order to maintain this valuable student-practitioner engagement. While events such as on-campus product exhibitions, out-of-town field trips, and in-person mixers were all put on hold over the past academic year, the SLDC debuted a number of new events and put a virtual adaptation on a few old favorites.

Former LDDI student and incoming sustainable land development M.S. student **Morgan Newcomb** served as the SLDC president this year and offered the following of the experience, *“With COVID in mind, I knew that when I accepted the position of president of the SLDC that I would have to think outside of the box in order to keep the club on track. We successfully executed numerous panels via the online environment with new and familiar faces from across our industry - no doubt a big contributor to maintaining our club’s membership numbers throughout the pandemic (of course alongside Kevin and Claire’s class shout outs for our meetings!). We also hosted a new cohort of graduate student speakers to support and attract attention to the debut of the sustainable land development master’s program. I’m excited to see how the club will continue to grow under the leadership of my successor, Tyler Misencik, and the unwavering enthusiasm that has only been highlighted by these unprecedented times.”*



The following section presents some of the SLDC events and activities over the past year, all of which contributed to fulfilling the mission of connecting industry professionals with LDDI students.

Resume Review Workshop

The Resume Review Workshop was scheduled two weeks ahead of the spring Virginia Tech CEE Career Fair to give land development students an opportunity to update their resumes and get some timely advice from recruiters. Ben Priddy (Kimley-Horn), Courtney Cooper (Timmons Group), and Hannah Godsey (Draper Aden Associates) kicked off the session by providing an overview of resume dos and don’ts, advice on elevator speeches, and tips on how to follow up after an interview. Students were then placed into breakout rooms with one of the three recruiters to have an opportunity for a smaller group discussion and review of their current resumes. Of the event, **Courtney Cooper** offered, *“The LDDI virtual resume review session was still a great way to network with students, even though it was not conducted in person this year. I enjoyed the opportunity to meet one on one with students to provide feedback on their resumes, interview tips, and to get to know them and their interests. It was definitely time well spent and a great networking opportunity.”*

Design Charette

The annual Design Charrette and Competition was one of many LDDI events shelved during the spring 2020 semester when Virginia Tech abruptly canceled essentially all on-campus activities in the midst of the then-emerging COVID-19 pandemic. This spring, LDDI and the SLDC were thrilled to once again host the event, the eighth of its kind and first in a virtual, Zoom-based format. Providing the site design challenge and moderating this year's charrette was **Skip Notte**, Dewberry Vice President and Business Unit Manager and member of the LDDI Executive Board, who states, *"I have been fortunate enough to engage with LDDI students through the Design Charette Competition that takes place during the spring semester. I am always impressed with the commitment of each student team that participates. They approach the competition with a great attitude focused on learning and implementation of the knowledge, tools, and experience they have gained through class instruction and/or professional internships. Through their competition deliverable and presentation to the judges, it is obvious that they have a great educational foundation that will support them throughout their careers."*

Past in-person charrettes have followed a format in which Skip begins by providing the student contestants with an introduction to the site, the development goals, and any unique caveats or restrictions on the site or their design. Following this introduction, student teams are given one hour to work toward a design that meets the development objective while also adhering to relevant codes and sound engineering design principles. Dinner is then provided to the student participants while their designs are judged by Skip, CEE faculty members, and professional engineers drawn from the LDDI network. The overarching goal in adapting the charrette to a virtual modality this spring was to preserve key elements of the experience, most notably group collaboration among student teams and creating a competitive atmosphere where limited time forces students to work under pressure and prioritize site layout and other design decisions. Aside from not being able to provide the student contestants with dinner while their work was being judged, perhaps the most notable difference between this spring's virtual charrette and past events was the use of Civil 3D compared to all hand sketching/drawing in past competitions. In total, 19 students representing 7 teams competed in this year's charrette with the first, second, and third place teams receiving \$100, \$50, and \$25 gift cards, respectively. Rising CEE senior **Henry Brown** was a member of the winning team, and of the event stated, *"Sharing a common vision is critical for any team, so my teammate and I spent significant time discussing the design challenge before starting to work in CAD. Our teamwork paid off as we worked together effectively under pressure to curate a drawing and a presentation. This exercise helped me to practice my collaborative skills in a difficult environment. Limited by the Design Charrette's time crunch, our team focused on the fundamentals. We embraced existing conditions by avoiding costly bridging and earthwork while producing a robust, flexible plan. Time constraints taught me how to clearly see design priorities."*



LDDI thanks Skip for not only leading the charrette for his sixth time in total, but also for his effort to flawlessly adapt the event to a virtual setting.

"The LDDI program helped launch my career in land development. The Intro class sparked my interest in the field as it is set up in an organized and professional manner. Real-world experience and collaboration with mentors from several companies in the industry is provided through the design course. The extensive LDDI network builds a strong community of alumni, teachers, students, and others in the industry. I am thankful for the leaders in the program for helping me develop skills and experiences that I will take into my career."

– **Peter Belgrader**, CEE Class of 2021, Staff Engineer, Bohler

Local Field Trip

Adhering to Virginia Department of Health and Virginia Tech public safety protocols, the 2020-21 academic year provided little opportunity for in-person gatherings, and most SLDC events were necessarily adapted to a virtual delivery mode. Some experiences though simply can't be adequately replicated through Zoom, Microsoft Teams, and other online collaboration platforms, and unfortunately for the second year in a row LDDI's annual spring, out-of-town field trip was canceled. However, in February, a number of fortunate coincidences intersected, resulting in an opportunity for SLDC members to participate in a site visit to an active construction site located just off of South Main Street in Blacksburg. The close proximity of the mixed-use development project to campus meant that students could provide their own means of transportation to the site, thus avoiding the logistical challenges

imposed by restrictions governing the maximum number of occupants in university-owned vehicles. The timing of construction activities was also advantageous, if not rare for the time of year, in that contractors were actively installing Advanced Drainage Systems (ADS) StormTech stormwater detention chambers during the period of time for which the site visit was being planned. Finally, the project's engineer of record (Balzer & Associates) and product supplier (ADS) are Gold and Dymond level sponsors of LDDI, respectively, and each company's primary contact on the project is a former LDDI student! While February in Blacksburg rarely provides comfortable outdoor conditions, and to maintain compliance with university protocols, students were required to wear masks during the visit, the opportunity for an in-person site visit was simply too good to pass up on, and on a chilly Monday afternoon students toured the project site. **David Camden, P.E.**, ADS Sales Engineer, organized the site visit and stated, *"I have been involved with the LDDI program for almost four years. As a Virginia Tech graduate, the most personally rewarding experience offered by the program for me thus far has been to coordinate the student field trip on an active construction project in Blacksburg. This project provides a great example of how proprietary BMPs like ADS-StormTech can complement traditional or low-impact designs (LID). The students were impressed by the scale and application of the StormTech chambers and engaged with lots of questions for myself, the engineer and developer. The design engineer, James, and I are both 2011 VT CEE graduates, which made the 'giving back to the students' experience that much more nostalgic."* **James Taylor, P.E.**, Associate, Balzer & Associates, worked with Camden to arrange the visit and offered, *"Balzer and Associates has long recognized the value of the involvement of designers, engineers, surveyors, contractors, and vendors in all stages of the development process from inception through construction, and LDDI has provided the platform for students to jump in as well. The usefulness of seeing first-hand how design concepts on paper translate to the constructed world is something that I have enjoyed sharing with the students and a big thank you goes out to LDDI for providing this opportunity!"*

LDDI thanks David and James, and their respective companies, for hosting the site visit and providing this rare opportunity for in-person engagement during the 2020-21 academic year.



Students attend a field trip hosted by LDDI sponsors ADS and Balzer & Associates

Young Professionals Panels

During the spring 2020 semester, LDDI and the SLDC debuted a brand new event titled the “Young Professionals Panel.” For many graduates, the transition from college to the professional world represents an abrupt lifestyle change that can be challenging to navigate. For some students, questions and stress begin to emerge before they even graduate and accept a position. *What will my first six months on the job be like? What about the first year? Would I thrive working for a small land development firm or a large, multi-discipline company with a national or even international footprint?* Students are sometimes understandably overwhelmed by these questions and challenges, and with a panel comprised of graduates of the LDDI program, this new event sought to help current students benefit from the experience and advice of those who have gone before them. Student feedback on the inaugural event was overwhelmingly positive and, similarly, the former LDDI students serving as panelists greatly enjoyed returning to campus and speaking with current students. Moving forward, LDDI intends to add the Young Professionals Panel to our annual events list that includes the Value Engineering Workshop, Design Charrette and Competition, and Career Night Mixer.

In an effort to make the event accessible to as many students as possible, two panels were held during the spring 2021 semester, both of which were conducted virtually. LDDI graduate, and Engineer at Bowman, **Casey Britt** participated in one of the spring 2021 panels, and of the experience states, *“The Young Professionals Panel is a terrific way for LDDI students and alumni to connect and share their experiences. Reflecting on my past few years in the professional world, I realized that there were many challenges that students may not recognize in the transitioning phase between college and the working world. Having recent graduates of the program come back and speak on their unique experience I believe should broaden students’ expectations and helps to ease their transition.”*



LDDI recognizes and thanks the following individuals for participating in the spring 2021 Young Professionals Panels:

- Alison Beisner, Gordon
- Taylor Bolte, Virginia Tech
- Casey Britt, Bowman
- Michael Jeska, WithersRavenel
- Matthew Koop, Bohler
- Adam Norrbom, Cowen Design Group
- Caitlin Pendergast, Cowen Design Group
- Lars Peterson, Rodgers Consulting
- Heather Timothy, Kimley-Horn
- Sam Wilson, Timmons Group

Industry Professionals Panels

With its home in the Via Department of Civil and Environmental Engineering, the LDDI curriculum understandably focuses on preparing young engineers for the site design aspects of the land development industry. However, anyone working in the industry is well aware that the diversity of professional disciplines involved in even the simplest projects expands well beyond the site design engineer, and includes other engineering specialties, developers, municipal engineers, surveyors, architects, contractors, and others. A core mission of LDDI since its inception has been to make students aware of the various career opportunities in the land development industry, including those outside of the engineering realm. Further, even though the majority of LDDI students enter the industry as site design engineers, it's important that the LDDI curriculum acquaint students with those other professional disciplines with whom they will inevitably work and collaborate.

To help better achieve these outcomes, during the fall 2020 semester, LDDI debuted a new practitioner involvement event – Industry Professionals' Panels. In total, three of these panels were held, each featuring a different theme and associated guest speakers. The first panel, titled *"Developers and Municipal Government"* featured a private residential developer as well as a large-scale industrial developer. This panel also welcomed a representative from municipal economic development. The theme of the second panel was *"Engineering Specialists and Architects,"* with panelists from transportation, environmental, and geotechnical engineering, as well as architecture. The final panel, *"Contractors and Construction Support Services"* featured a product vendor, surveyor, municipal government representative, and two contractors. Student attendance at these after-hours events was fantastic, with more than 70 students attending at least one of the panels.

LDDI thanks the following individuals for their participation in the inaugural series of Industry Professionals' Panels:

- Mike Bailey, Ramey Kemp Associates
- Brian Breissinger, Timmons Group
- Jim Clark, Advanced Drainage Systems
- Ralph Clements, Gay & Neel
- Michael George, Community Housing Partners
- Aaron Hazelgrove, Whiting-Turner Contracting
- Robert Moore, City of Portsmouth Economic Development
- Wayne Nelson, Town of Christiansburg
- Dough Pinckney, Draper Aden Associates
- Amanda Schlichting, Dewberry
- Adam Schmid, Brookfield Properties
- Cathy Underwood, Branch Builds

We intend to continue hosting these Industry Professionals' Panels, and look forward to their debut in an in-person format this fall!

"LDDI continues to find new and interesting ways to prepare students entering the workforce. When I graduated from Virginia Tech in 2011, I departed with strong fundamental land development skills, but quickly figured out that I had a limited understanding of the relationship civil engineers have with the other disciplines that make up a comprehensive project team. In an effort to patch this blind spot, Timmons Group worked with LDDI in the fall of 2020 to facilitate a virtual panel of speakers across three events to talk about their specialty, and touched on 12 different facets of the project team and how their work related to the land development engineer. This included architects, wetland scientists, contractors, surveyors, geotechnical engineers, and many others! This was virtually attended by nearly 100 students at each panel, and generated some great questions for a Q&A following the presentation. Thank you to LDDI for partnering with Timmons Group on this effort, and we look forward to similar events in future semesters!"

-Josh MacDonald, P.E., Project Manager, Timmons Group
Chair, LDDI Membership Committee

Guest Speakers

This spring, SLDC welcomed two guest speakers to talk to the club about networking and stormwater management topics. In March, **Tara McCarthy** joined the club to talk about networking, including in-person engagements and virtually through LinkedIn. Tara has almost 20 years of marketing and business development experience in the design and construction industry. She encouraged the students to put themselves out there by getting involved with an organization, pairing up with a buddy for networking events, and working on expanding their network. She also provided tips on how to be more active on LinkedIn including appropriate profile photos, how to connect with people, and the benefit of commenting on connections' posts rather than just liking. Reflecting on the event, Tara shared, *"the LinkedIn platform is vital to a young professional's career. Think of it as the Amazon of all things networking. You can find your co-workers, clients, recruiters and industry knowledge all in one place. Sharing best practices and some handy tricks with the LDDI students is one lesson I would happily do again each year."* SLDC President **Morgan**



Newcomb attended the session and offered, *"With COVID-era recruiting, Tara McCarthy's networking/LinkedIn session with SLDC was able to help break some of the stigmas surrounding the use of online platforms to meet recruiters. She put a strong emphasis on following up and reaching out after events, working on our visibility algorithms, and generally about the importance of not losing all those business cards you shoved into your pocket."*

In April, the SLDC welcomed Jim Clark, Engineered Products Manager with Advanced Drainage Systems. Jim has been a frequent speaker to the SLDC in recent years, and this spring's talk included a discussion of the company's projects abroad and how their innovative stormwater management products are becoming increasingly used in place of more traditional above-ground facilities. Jim's talks always include a lot of great construction photos, helping students better bridge the gap between what they see and design on a computer screen and what is actually installed in the field. Incoming SLDC president and rising junior **Tyler Misencik** attended Jim's talk and offers, *"It was really interesting to hear about some of the international projects that ADS has worked on in South and Central America, as well as Europe, and the stormwater challenges faced there and in the United States. I also enjoyed learning how some of the ADS products are capable of providing a groundwater recharge function on developed sites."*

"The LDDI program has provided me with the most beneficial relationships and experiences I could ever ask for as an engineering student. Through the four different LDDI courses I have taken, I gained a wide range of knowledge about the land development industry, CAD design, and finding real world solutions. LDDI's Design Course offered an internship-like experience with professional engineers as mentors and an engineering team consisting of my peers for an entire semester. Advanced Land Development allowed me to network with professionals and receive invaluable career advice from various engineering firms. Sustainable land development fueled my passion for sustainability and attracted me to the new sustainable land development master's program. I am eternally grateful for all that LDDI has given me and I look forward to pursuing my master's degree in civil engineering."

– **Miranda Tison**, VT CEE Class of 2021, SLD MS Class of 2022

LDDI FACULTY AND STUDENT AWARDS

We would like to recognize the following LDDI faculty members and students for the recent awards and recognitions they have received.

- **Dr. Randy Dymond, Conferred the title of Professor Emeritus**

A member of the Virginia Tech community since 1998, former LDDI Coordinator Dr. Randy Dymond retired in May 2020. In December, he was conferred the title of Professor Emeritus. The emeritus title is conferred on retired professors, associate professors, and administrative officers who are specially recommended to the Board of Visitors by Virginia Tech President Tim Sands.

- **Kevin D. Young, College of Engineering Certificate of Teaching Excellence**

Each year, Virginia Tech's College of Engineering awards four Certificates of Teaching Excellence (CTE) in recognition of faculty who have demonstrated effective student learning, exemplary curriculum design, professional development, and impact beyond Virginia Tech. This year marks Kevin's third time receiving a CTE.

- **Morgan Newcomb, LDDI Hokie Stone Award**

This award recognizes an LDDI student whose leadership, attitude, and personality elevate the performance of all those around them.

- **Akul Mehra, LDDI Leadership in Sustainability**

This award recognizes an LDDI student's commitment to sustainability as it relates to land development design.

- **LDDI Senior Design Team of the Year: Garrett Caskey, Conor Doane, Brendan Kent, Brendan Snell**

This award recognizes the top CEE 4274 design team of the past academic year. The fall 2020 semester design team was mentored by professionals from Pennoni, and presented at LDDI's 2021 winter and spring meetings.

- **LDDI GTA Recognition: Erin Hrovatic, Jackie McCarthy, Trevor Painter**

Each year, we acknowledge the GTAs who are such integral contributors to the success of the various LDDI courses. This year, we recognize and thank Erin Hrovatic, Jackie McCarthy, and Trevor Painter for serving as GTAs in CEE 3274, CEE 4254, and CEE 4264.

- **CEE Departmental Scholarships for Students with a Land Development Focus**

- **Justin Wingenfield & Timothy Blake:** William A. Joyner Scholarship
- **Charlyn Castillo:** Howell & Ann Simmons Scholarship
- **Rachel Stewart & Robert Baumann:** Balzer & Associates Scholarship

HOW TO GET INVOLVED WITH LDDI

Since its earliest beginnings, LDDI has relied heavily on the “time, talent, and treasure” of industry professionals to achieve program goals. The past 15 years have seen LDDI grow to become a nationally-recognized leader in undergraduate land development design education and is now embarking in establishing the first master’s degree program as well. There are nearly 800 individuals currently in the LDDI database, with many attending LDDI General Meetings and other LDDI functions. During these meetings, these professionals contribute ideas for curriculum improvements, practitioner engagement with students, and other suggestions for improving the program. If you are not already on our email list, please reach out to us at lddi@vt.edu in order to receive invitations to future events, as well as eUpdates, newsletters, and other program news.

There are many ways for individuals to become involved with LDDI, including joining the Industry Advisory Group. Each member of the Industry Advisory Group is assigned to one of the committees described below. We encourage you to review the respective summaries of each committee to see what best matches with your own interests and professional expertise. One of the first action items for each committee is to develop a new charter, so now is a great time to get engaged regardless of your previous involvement! Each committee provides its own unique opportunities to become active in the program.

For organizations, LDDI offers four tiers of corporate sponsorship, and two levels of municipal membership. Contact information to discuss sponsorship/membership opportunities is also provided.

Practitioner/Technical and Research Committee

The Practitioner/Technical and Research Committee assists the Via Department of Civil and Environmental Engineering in providing a strong and sustainable land development design undergraduate and graduate curriculum. The committee is also a resource for research as part of the sustainable land development graduate program. This committee identifies opportunities for practitioner involvement both inside and outside of the classroom, which is a cornerstone of LDDI.

Special Events and Fundraising Committee

The Special Events and Fundraising Committee is responsible for organizing fundraising events such as the annual golf tournament as well as splash events to roll out new programs or initiatives. This committee is also involved with the annual sponsorship drive, annual VT Giving Day, and ongoing endowment efforts.

Membership Committee

The Membership Committee provides assistance with planning and organizing LDDI’s three annual General Meetings. They also assist with recruiting new members to the LDDI network as well as regular review of the membership benefits.

Marketing and Public Relations Committee

The Marketing and Public Relations Committee is responsible for expanding the footprint of LDDI through outreach events (“Road Shows”) in new geographic markets in addition to overseeing LDDI’s social media presence. They are responsible for updates to the LDDI name and logo. This committee is also tasked with Diversity, Equity, and Inclusion initiatives.

Young Members Group

With the new organizational structure, LDDI wants to get alumni of the program more actively involved! The Young Members group is intended for recent graduates (generally one to seven years post graduation) and provides a forum for them to collaborate with their peers as well as become involved with the committees outlined above. This group may also be tasked with special projects, and can be viewed as a stepping stone for future membership on the Industry Advisory Group.

Corporate Sponsorship, Municipal Membership, and Individual Giving

Last year, LDDI enjoyed the support of 40 corporate sponsors and municipal members, and more than 130 individual donors. There are four levels of annual corporate sponsorship which afford varying levels of student access and interaction. Two levels of membership are offered for municipalities and other government agencies. For more information, please contact Kevin Young, Claire White, or visit the LDDI website at <http://www.lddi.cee.vt.edu>.

For more information on how to get involved with LDDI, please contact:

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(540) 231-2474
keyoung@vt.edu

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Jeff Gilliland, P.E.
LDDI Executive Board Chair
(703) 361-1550
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LDDI Executive Board Vice Chair
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RECOGNITION OF SPONSORS AND DONORS

Dymond Level

ADS

From its introduction and championing of corrugated plastic drainage pipe in the United States more than fifty years ago, to its current line of innovative products, Advanced Drainage Systems (ADS) has been a leading materials supplier for the land development industry. The company's commitment to excellence has been long-recognized, including by the Plastics Pipe Institute, where ADS was previously honored with a Project of the Year award for the Hugh K. Leatherman, Sr. Terminal in North Charleston, SC. More recently, ADS' sustainability microsite won an AVA Digital Award and has been nominated for Sitefinity's Website of the Year. Since coming on board as a Dymond-level sponsor in 2018, ADS has been actively involved with LDDI both inside and outside of the classroom. The past academic year was no exception, and featured MidSouth Zone Engineer Sandy Camargo speaking to multiple sections of LDDI's CEE 3274, CEE 4264, and CEE 4274 courses. The company was also involved with LDDI outside of the classroom, with Engineered Products Manager Jim Clark speaking at an after-hours SLDC function, and Sales Engineer **David Camden** leading a student field trip in February. Of his involvement with LDDI over the past year, Camden states, *"Our partnership with VT LDDI has provided many unique and rewarding opportunities for ADS and myself. From working alongside one of my former professors (Kevin Young) to enjoying the Drillfield on a nice sunny day; all while educating students and showcasing the products and services ADS has to offer. LDDI has provided great exposure to the next generation of engineers, while allowing us to demonstrate how consultive vendors like ADS contribute to the design-construction process."*



Bohler

With 28 locations from New England to Texas, Bohler's team of driven professionals provides consulting and site design services to developers and their partners across commercial, institutional, and residential real estate sectors. Bohler is consistently partnering with clients to create opportunity for high-profile projects, such as the Wheaton Revitalization in Wheaton, Maryland and the award-winning 2100 L Street office development in Washington, D.C. The firm opened its 28th office in Richmond, VA in the fall of 2020 to better support Bohler's work throughout central Virginia for the past two decades.



Bohler has been a sponsor of LDDI since 2007. Bohler provided mentors for both the fall 2020 and spring 2021 offerings of LDDI's senior design course, and representatives from the company frequently visit campus to present at Sustainable Land Development Club (SLDC) meetings and to attend events, including LDDI Career Nights and the CEE Career Fair, both virtually and in person. Additionally, Bohler provided one of the three instructional teams for the Advanced Land Development Course this past spring semester.

During the 2020-2021 academic year, Bohler hired four full-time graduates and eight interns from the LDDI program. **Pilar Moore**, a 2017 graduate of the program, had this to say: *"The LDDI program gives students a significant head-start in their career when they graduate. The technical engineering and CAD skills I learned in school were equivalent to a few months of training, so I was able to apply what I learned on projects right away. Along with academics, the program goes above and beyond most civil engineering programs and introduces students to industry professionals and real world experiences. Upon graduating, I felt like I fully understood what my career could look like because of the repeated exposure to firms, like Bohler, that sponsor the program."*

Bowman

Bowman Consulting Group Ltd (Bowman) is an established professional services firm delivering innovative engineering solutions to customers who own, develop, and maintain the built environment. With over 800 employees and more than 30 offices, Bowman provides a variety of planning, engineering, construction management, commissioning, environmental consulting, geomatics, survey, land procurement and other technical services to customers operating in a diverse set of regulated end markets. This year, Bowman realized a strategic goal and on May 11, 2021, completed its \$51.7 million initial public offering and began trading on the Nasdaq under the symbol BWMN. Additionally, Bowman was ranked #144 on Engineering News Record's listing of the Top 500 Design Firms. The firm was also recognized as #8 on the Washington Business Journal's ranking of the largest engineering firms in Greater D.C.


 The logo for Bowman Consulting Group Ltd, featuring the word "Bowman" in a bold, dark green, sans-serif font.

Bowman has been a sponsor of LDDI since 2007, with Principal Roy Waugh serving as a life member on the original LDDI Advisory Board and Bill Pyle serving as Bowman's current representative in LDDI's new Industry Advisory Group. Firm President Gary Bowman has been one of LDDI's strongest advocates since the program's infancy, and continues to support the program through his personal contributions and commitment of company resources. Bowman is actively engaged in many aspects of LDDI, including frequent mentoring in LDDI's senior design course, and is a fixture at the LDDI Career Night and CEE Career Fairs.

Casey Britt, CEE class of 2019 and Bowman Engineer, states, *"The LDDI program was such a beneficial aspect of my collegiate career. Many students and I have benefited not only from the great academics, but also the many real-world applications that were provided to us. Whether it was taking a field trip to an active site or participating in the design charette, all of the opportunities provided by the LDDI program boosted my confidence and knowledge before entering the professional world."*

Concrete Pipe and Precast

An LDDI sponsor since 2018, Concrete Pipe & Precast, LLC (CP&P) was formed in 2012 as a joint venture between Americast, Inc. and Hanson Pipe and Precast, LLC to serve the construction industry with concrete pipe and precast products in the Mid-Atlantic and Southeastern United States. Although the past year has been tough for everyone, CP&P has adapted to a new way of doing business.



Hank Gottschalk, CP&P's Technical Marketing Manager, says *"We have learned new ways to educate through virtual training. Using various online platforms allows us to educate groups of people without major disruptions to their work day. CP&P offers technical training in many key areas of the precast concrete and reinforced concrete pipe fields including design, installation, and inspection of our buried infrastructure systems. We intend to offer LDDI students the ability to attend many of our training sessions over the next year."*

The past year has been one of numerous recognitions for the company, with three of their plants named to the National Precast Concrete Association Top 25 Quality Awards list (Ashland, Dunn, and Greencastle). CP&P's Salem and Greencastle plants were also recognized with National Precast Concrete Association safety awards. The company's Hanover plant was recognized with safety awards from both the Heavy Construction Contractor Association and the Hampton Roads Utility Contractors Association, and their Charleston plant received a safety award from the American Concrete Pipe Association. Current high profile projects that feature installation of CP&P products include the \$3.8 billion Hampton Roads Bridge Tunnel Expansion, the \$2.3 billion VDOT Route 7 expansion, and numerous data center and warehouse projects in Northern Virginia and the D.C. metro area.

Pennoni

Pennoni is a multidisciplinary firm, including civil and transportation engineering, landscape architecture and planning, MEP, environmental sciences, and survey, with more than 1,200 professionals in 35 offices serving the needs of clients across the US. In the past year, Pennoni has worked on a variety of project types and sizes, spanning everything from a mixed retail and residential development on a 0.54-acre site in the historic Town of Leesburg, VA to the \$3.5 billion Schuylkill Yards development located in Philadelphia, PA.



Pennoni ranks #15 on the Virginia Business Magazine's 2021 Top Architecture and Engineering Firms List and #21 on the 2021 Washington Business Journal's ranking of the largest engineering firms in Greater D.C. Pennoni is ranked #91 on the 2021 ENR Top 500 Engineering Firms and #11 in the Mid-Atlantic Top Design Firms.

A sponsor of LDDI since 2011, Pennoni continued its active support of LDDI over the past year, with Regional Vice President Sue Wolford serving on the LDDI Advisory Board as well as a virtual instructor for CEE 3274, and with other Pennoni staff joining in to serve as mentors for the CEE 4274 design course.

Pennoni has hired several recent graduates and interns from the LDDI program, one of whom, **Brendan Snell**, CEE Class of 2021, offered, *"I chose the LDDI program because I heard it takes what I have been learning in class and applies it to a real-world scenario. I got exactly what I was looking for. A quote that really stands out came early in the semester from my mentor, Mark Liberati of Pennoni who said, "Take this course seriously because it can come along with a job offer." It was an extremely rewarding experience. You really get out the amount that you put in, as I am now a member of the Pennoni team."*



Platinum Level

ATCS

ATCS is a professional consulting firm dedicated to providing comprehensive, multidisciplinary services including land development, transportation planning and design, traffic engineering, construction management and inspection, surveying, and other civil and environmental engineering services. Headquartered in Herndon, Virginia, the firm has eight offices across Virginia, Maryland, North Carolina, and Pennsylvania. ATCS was recognized as one of the top places to work in 2020 by The Washington Post.

As a Platinum-level sponsor of LDDI since 2016, ATCS maintains an active role in the program. Vice President of Hampton Roads Operations, **Kevin Siegel**, and Civil Site Manager, Rich Barnes, have mentored multiple semesters of CEE 4274, and of the experience Siegel states, *"As a VT alum, it's exciting to be able to share my nearly of 20 years of civil engineering experience with our future land development engineers – it's a very rewarding opportunity."* **Lanna Clements**, a 2014 LDDI graduate and Assistant Project Manager in ATCS' Largo, MD office recently joined LDDI's newly-formed Young Members Advisory Group. Working on numerous land development projects throughout DC-Metro, she says *"Affordable housing and housing affordability are two major issues affecting DC-Metro. On a daily basis, I leverage the skills I learned in the LDDI program to help our clients deliver innovative, cost-effective solutions to improve housing affordability. On a recent multi-family development project, I worked interactively with the architect and geotechnical engineers to ensure value engineered earthwork that protected natural resources on the site. The collaboration ensured the project was economically viable and I expect construction to begin on the 160-unit apartment building to begin in Fall 2022."*

christopher consultants

As christopher consultants, ltd. (christopher) approaches 40 years in business, their growth continues rapidly. With six office locations across Virginia and Maryland, christopher provides a full range of services including civil engineering, surveying, planning, and landscape architecture. christopher boasts a robust staff of 150 full-time employees, of which 14 are Virginia Tech alumni. christopher welcomed 8 interns in the summer of 2021, 6 of whom are Virginia Tech students.



In 2020, christopher moved up on the Washington Business Journal's lists to #14 among top-earning engineering firms and to #9 among largest landscape architecture firms in the greater DC area. In response to the social unrest in 2020, christopher developed a robust Diversity, Equity & Inclusion initiative including the creation of Employee Resource Groups and a college scholarship fund. In the spring of 2021, christopher acquired Ross-France, adding 59 years of civil engineering and land surveying excellence to their own 40 years.

A designated small business under Virginia's SWaM program, christopher has been a proud sponsor of LDDI since 2007. christopher regularly mentors the senior design course and attends the LDDI Career Night Mixer and the CEE Career Fair. *"LDDI is such a beneficial program to participate in, both for the students and the mentors"* said **Tiffany Caceres**, Project Manager at christopher and LDDI senior design course mentor in the spring 2021. *"It's great to see the students tackle various puzzles relative to the project sites and apply what they are learning in class. As a mentor, it was exciting to hear and guide the discussions amongst the team as they worked through the design. This class provides a great introduction into civil engineering site design for the students and an opportunity for the mentors to engage with the future of our industry."*

Dewberry

Established in 1956 and headquartered in Fairfax, VA, Dewberry is a leading, market-facing firm with a proven history of providing multidisciplinary professional services to a wide variety of public- and private-sector clients. Ranked by Engineering News-Record as the #37 Top Design Firm, Dewberry recently acquired Florida-based water firm Hydro Solutions Consulting, LLC and Southeast MEP firm Edmonds Engineering.



The Virginia Chapter of the American Council of Engineering Companies (ACEC) recognized Dewberry in 2021 with the ACEC Pinnacle Award for the I-95/Route 630 Interchange Reconstruction and Widening project in Stafford County, Virginia and a Merit Award for the Elmont Water Storage Tank and Booster Pump Station project in Hanover County. With more than 2,000 employees and 50 locations, Dewberry has been a proud sponsor of LDDI since 2007, hiring 24 interns and 10 entry-level graduates in the past year.

Throughout the company's time as a sponsor, Dewberry has been involved in nearly every aspect of LDDI. Skip Notte currently serves on the LDDI Executive Board. Skip is a frequent guest speaker in multiple CEE courses and ASCE student chapter meetings, and since 2012, has led one of LDDI's hallmark Practitioner Involvement events, the spring semester Design Charrette and Competition.

Dewberry recruits heavily across all disciplines within Virginia Tech CEE, including LDDI. A graduate engineer in Dewberry's Richmond office and former LDDI student **Danielle Poindexter** says, *"Virginia Tech's LDDI program guided me into a field of civil engineering that I am passionate about. Specifically, the Land Development Design course gave my team the opportunity to work with a mentor through the design process and present our plans to a room full of professionals and our peers. That hands-on experience provided by the LDDI team prepared me for the work I do every day now at Dewberry."*

Draper Aden Associates

Founded in 1972, Draper Aden Associates is a full-service engineering firm including civil engineering, environmental services, geotechnical engineering, structural engineering, surveying, and aerial mapping services, with offices located across Virginia and North Carolina. They have a long-standing tradition of providing site planning and engineering services for projects on Virginia Tech's campus and throughout Blacksburg such as Holden Hall and the Creativity and Innovation District (CID) on campus and the Blacksburg Multi-Modal Facility. Last year they were recognized by the American Council of Engineering Companies (ACEC) with the Virginia Merit Award for work on Henrico County Public High Schools Turf Field Installations



Draper Aden Associates has been a sponsor of LDDI since 2007 and remains active through participation in Career Night Mixers, class presentations, and design course mentoring.

Sydney Mitchell, Class of 2012, shared *"The opportunity to be a mentor and work with the LDDI students at Virginia Tech this year was not only a rewarding experience, but a nostalgic one. Having been through the program myself and now being on the other side really reiterates how this program prepares the students for real world situations they will find themselves in after graduation. The teams expanded their knowledge this semester, through what they learned in the class room and through good team work, to come up with a realistic design that would work for their client."*

Edens

EDENS, founded in 2004, is a real estate development firm based in Durham, NC with a branch office in Kingsport, TN. Utilizing in-house design, real estate and finance expertise, Edens specializes in residential development for regional and national homebuilders, asset management, restaurant/hospitality, and the development and management of the EDENS brand residential rental properties, which include unique environmental and social components in addition to creative design.



2020 marked the company's third year as an LDDI Platinum-level sponsor, and firm president and proud Hokie alumnus Jarrod Edens served as a mentor in LDDI's senior design course for a third time during the Fall 2020 semester. Jarrod also participated in the professional development student mentoring program that debuted in LDDI's junior-level course this past academic year. A committed mentor, student teams working under Jarrod's tutelage have in the past been extended the honor of being invited to present and represent LDDI at a General Meeting. **Wesley Yeung** (CEE Class of 2021) was a members of the student design team mentored by Jarrod during the fall 2020 semester and of his mentoring Wesley offered, *"It was a wonderful experience working with Jarrod and his company, Edens. He was very accommodating and thoroughly explained what goes into land development design so that even students without internship experience like me could understand."* Of his experience mentoring in the two courses, Jarrod states, *"I have always been impressed by the talent levels of the students in the LDDI course. With each project we consistently receive great questions and feedback, and often find that students have discovered ideas that my experienced staff had not yet thought of. I look forward to participating in the future growth of VT's LDDI program."*

GORDON

Founded in 1976, GORDON is an award-winning, multi-disciplinary design firm specializing in urban design, mixed-use, commercial, mission critical, and government facility development. The firm serves federal government clients including the Department of Veterans Affairs, U.S. Army Corps of Engineers, and National Institutes of Health, as well as private developers in the Washington D.C. Metro region and nationally across 31 states. Providing its clients with a full complement of civil engineers, land planners, landscape architects, surveyors, and security professionals, in January, the firm was recognized as #21 on the Washington Business Journal's ranking of the largest engineering firms in Greater D.C. Proudly employing more than 20 Virginia Tech alumni, GORDON has been a sponsor of LDDI since 2007.



GORDON participates in numerous LDDI functions, including CEE 4274 mentoring, CEE 3274 mentoring and class presentation, SLDC meetings, and networking mixers. This breadth of involvement grants the firm front-line access to LDDI students, and in 2020 the firm hired two-full time graduates of the program and two summer interns. This year, the firm will also welcome two additional LDDI full-time hires and three interns. **David McGettigan**, class of 2019, shared, *"I obtained two internships through connections facilitated by LDDI, which lead to my full-time job at GORDON. I credit the LDDI program for giving me the tools and connections to help jump-start my career. My recommendation to any young engineer navigating the transition from classroom to office is to become a sponge and take in whatever opportunity and responsibility comes your way, and know you've been prepared for this."*

J2 Engineers

J2 Engineers, founded in 2007, is built to be different: a different approach to engineering and landscape architecture, a different employer for talented employees, a different niche in the marketplace. J2 emphasizes a positive work culture to meet client goals through excellence in engineering. For the past four years, J2 has been recognized as one of Zweig's Best Firms to Work For. The firm's project portfolio features both private development and public facilities. A couple of signature projects from the past year, both located in Loudoun County, Virginia, consist of master planning for the Hartland Campus, including the design of final site plans for a middle school, and the design of Shellhorn Road, a significant roadway linkage near the future Loudoun Gateway Metro Station.



J2 is a dedicated LDDI sponsor since 2007 and remains active through class presentations, mentoring junior-level students and senior design project teams, attending the LDDI Career Nights, and organizing the annual golf tournament. This active participation positions yearly hires for the firm, including eight full-time and intern positions this year with students from the LDDI program.

John Connor Hill, CEE Class of 2018, shared, *"The LDDI program has a focus on networking, making the whole job-seeking process more enjoyable. I always felt prepared. Jeff was first introduced to me by Kevin at the LDDI Career Mixer, though I already knew of him and J2 from the presentations Jeff gave through the LDDI program. This early exposure and the preparation LDDI gave me eliminated the typical pressure students feel when meeting employers. LDDI helped me feel comfortable with J2 even before working there."*

Kimley-Horn

Kimley-Horn is one of the nation's premier planning and design consulting firms. With more than 5,000 staff members in 90+ offices across the U.S., the firm offers full services in a wide range of disciplines. The firm has been repeatedly included on Fortune's 100 Best Companies to Work For list, and in 2020,



Fortune also recognized the firm as the top Workplace in Consulting and Professional Services (Large). Kimley-Horn's portfolio includes serving both public infrastructure and private development with the full suite of civil engineering, planning, and landscape architecture services. Three signature projects from the last year include transportation planning and civil engineering design services for the new Las Vegas Raiders stadium and engineering, master planning, utilities, permitting for Crystal Lagoons, in Florida, and civil, mechanical, and structural engineering for the Mondrian South Beach, in Miami, FL.

Kimley-Horn has been a sponsor of LDDI since 2007 and remains active through participating in the LDDI Career Night, SLDC events, class presentations, and mentoring the junior level and senior design courses. Kimley-Horn also provided one of the three instructional teams for the Advanced Land Development Course this past spring semester. During the 2020 – 2021 academic year, we hired over 25 Virginia Tech students for full-time, post-grad opportunities, and summer 2021 internships. Former LDDI student and class of 2019 graduate **Andrew Plato** shared, *"Participating in the LDDI program set me up for success in my career at Kimley-Horn. The knowledge and experience that I gained during my time in the LDDI program prepared me to instantly contribute to projects. That strong foundation has resulted in opportunities to take on more responsibility, such as project and team management, at an earlier stage of my career. The LDDI program and senior design course offers Virginia Tech students a distinct opportunity to prepare for a career in the land development industry."*

McAdams

McAdams is a full-service land planning, landscape architecture, civil engineering and geomatics firm located in Durham, Raleigh and Charlotte, NC and Dallas-Fort Worth, TX. Comprised of over 300 professionals, McAdams has built its reputation throughout the industry over 42 years by delivering unmatched expertise and unwavering commitment to clients in a variety of markets, including municipal, education, healthcare, as well as commercial and residential development. 2021 continues to be a year of achievement for the firm, having received Zweig Group's "Best Place to Work" and "Hot Firm" awards, as well as our notable listing in the ENR 500. McAdams has been active in LDDI over the past year, serving as mentors in both the junior- and senior-level design courses. Additionally, our commercial group manager, Sean Gleason, was a keynote speaker on Dorothea Dix Park at LDDI's Spring General Meeting.



McAdams has been a sponsor of LDDI since 2018, and currently employs about 20 Virginia Tech alumni, including several recent graduates from the LDDI program. One of those recent graduates, **Connor Jones**, stated, *"The courses in the Virginia Tech LDDI program will teach you everything you need to know to have you prepared for your career. I took quite a few Land Development courses while at Virginia Tech. For one of the senior design projects, you will get the opportunity to work with an actual engineering company, like McAdams, on a land development project. The opportunity to work with a company and their engineers is unmatched. The Virginia Tech LDDI program prepared me for my job at McAdams better than I could have imagined. The transition from the collegiate world into working world was seamless as I was abundantly prepared to jump right in at McAdams."*

Timmons Group

Timmons Group has a long-standing tradition of providing excellent site engineering and planning services for thousands of projects across the United States. Most recently, Timmons Group provided civil engineering and landscape design services for the Central Sports Complex in Fauquier County, which provides multiple recreational and competition sports fields, concession stands and recreational pavilions, walking trails, batting cages, and related amenities. Additionally, Timmons Group provided civil engineering, site design, and offsite road improvements for the new 266,000 SF Heritage High School in Lynchburg, VA. As an Engineering New Record's top 500 design firm for over 25 years, Timmons Group has also ranked on Inc. 5000's Fastest-Growing Companies in America list for the last four years.



Joining as a sponsor in 2017, Timmons Group remains active in the many facets of LDDI. Timmons Group served as a mentor in both the junior-level and senior design courses and participated in multiple SLDC after-hours virtual events including the Industry Professionals Panel, Resume Review Workshop, and Young Professionals Panel. Timmons Group has hired more than 10 LDDI students for full-time and intern positions in the last year, including **Tim Gochmour**, Class of 2020. When interviewed about his experience with LDDI, Gochmour stated, *"During my time at Virginia Tech, LDDI made it easy for me to meet professionals and understand the industry through a mixture of casual and formal events that I felt comfortable in. These events were incredibly helpful for opening my eyes to a field that, as a student, was hard for me to imagine otherwise. Through LDDI, I was introduced to Timmons Group, and I cannot thank LDDI enough for helping me turn an intimidating job search into fun conversations and great times that got me to where I am now."*

Tri-Tek

Tri-Tek Engineering was founded in 1988 by Virginia Tech alumni Kevin Murray and Ted Britt. To this day, both remain actively involved in the firm's projects and are personally accessible to their clients. Tri-Tek believes that "Doing things according to plan" is not just a slogan, it's a reflection of the firm's commitment to client service, creative design, and professional integrity. Headquartered in Herndon, Virginia, the company provides a wide array of civil and environmental engineering services for both public and private clients.



Notable projects include a new 21,000 square foot indoor arena at Virginia Tech's Marion Dupont Scott Equine Medical Center in Leesburg. The new arena will provide safe and protected space for the center's evaluation and treatment of lameness conditions exhibited by its equine patients. In the commercial sector, Tri-Tek worked with new car dealer Ted Britt Ford – Lincoln to strategically plan and implement improvements for their anticipated growth. Tri-Tek's team worked with the client to design an expansion of their Lincoln branded operations in Chantilly. Additionally, another almost 7-acre site was purchased nearby for new car storage as well as a future building to relocate their truck service division to accommodate for future expansion. In the residential sector, Tri-Tek continued to support unique custom builder residences throughout the Great Falls and McLean area, several of which are now occupied by professional sports players and team owners.

Tri-Tek Engineering has been an LDDI sponsor since 2011 and routinely volunteers to mentor LDDI's senior design course. Additionally, representatives from the firm are regular attendees at the LDDI Career Night and the CEE Career Fair. Former LDDI student **Aaron Bartley** commented, *"LDDI gave me the tools for a quick start to my career. The program helped me become a well-rounded engineer and work my way up to my current Project Manager role with Tri-Tek."*

WithersRavenel

WithersRavenel is the largest employee-owned, multi-disciplinary design firm located solely in North Carolina, specializing in the planning, design, and construction of public and private projects. The firm offers expertise in environmental engineering, geomatics, land development and planning, landscape architecture, construction administration, stormwater, utilities, and funding and asset management. Signature projects for the last year include Cary Downtown Park, a 14-acre urban park set to position Cary as one of the state's leaders in urban vitalization. Another standout project is Smoky Hollow, an urban infill mixed-use project in Raleigh's Downtown District. It features a 12-story building with a 50,000 SF retail grocery, ancillary retail use, and 445 apartment dwellings. WithersRavenel and teaming partners received multiple awards for Smoky Hollow; the company was also recognized in the past year with a spot on Engineering News Record's Top 500, as well as receiving multiple client satisfaction honors.



WithersRavenel joined LDDI as a Platinum sponsor in 2018, and has hired four Virginia Tech graduates in 2021 along with two interns. The company is active in the LDDI program through participation in multiple career events, along with mentoring the senior design course. **Alexis Carambot**, CEE Class of 2013, reflects on how the LDDI program shaped her future. *"As a senior not knowing if I liked Transportation, Construction or Land Development best, I took a second senior design class. The material covered in the LDDI design class lays the building blocks of knowing the importance of communication and organization. It prepares you to work hard, solve problems, and experience the pressure of deadlines; it was in some ways a trial job. Additionally, the outside class events like the mixers give you insights on how to approach groups and networking."*

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