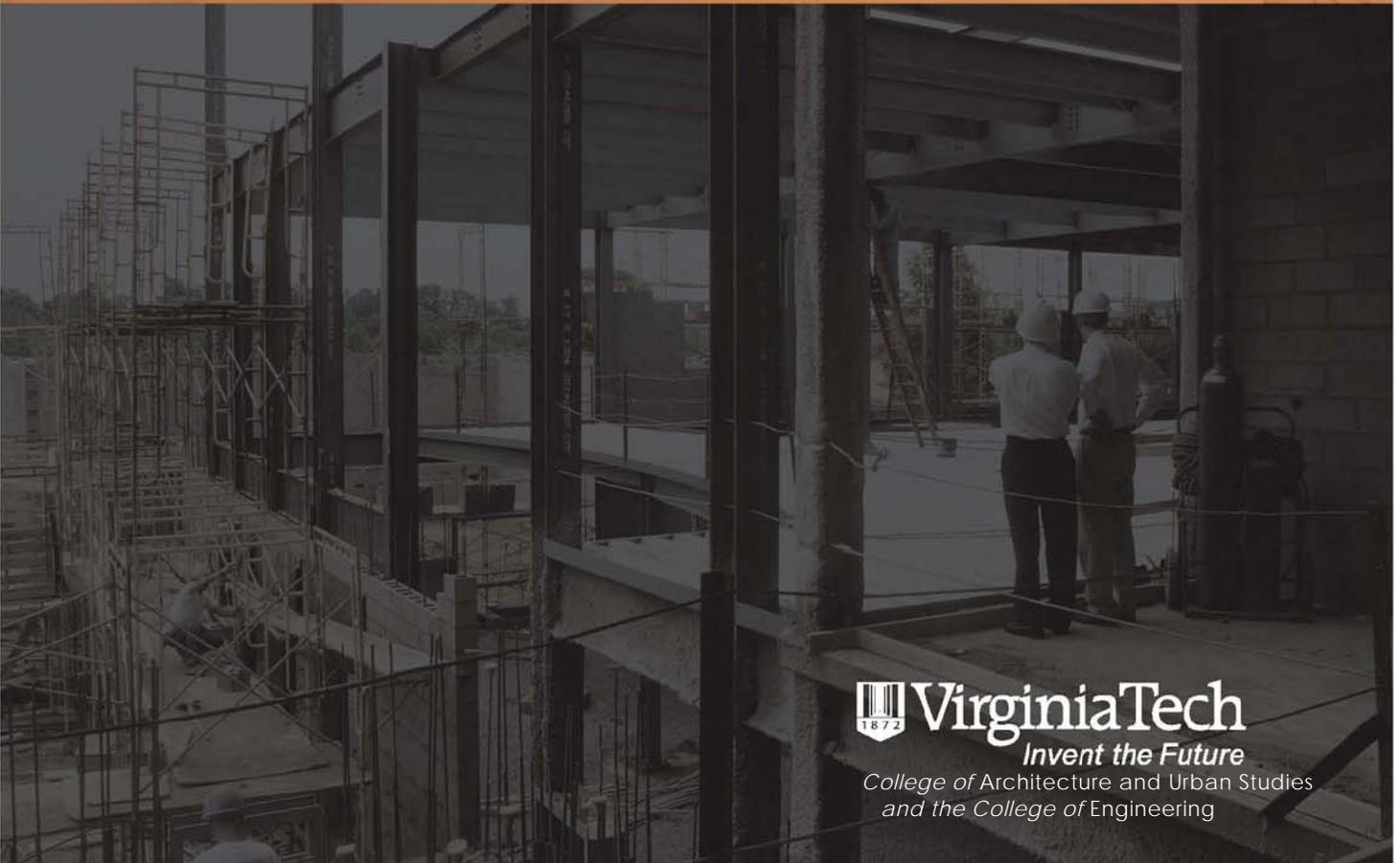




THE MYERS-LAWSON
SCHOOL OF CONSTRUCTION
SPRING 2009 REPORT
Volume 1001



MYERS-LAWSON SCHOOL OF CONSTRUCTION



VirginiaTech
Invent the Future

*College of Architecture and Urban Studies
and the College of Engineering*

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Myers-Lawson School of Construction (MLSoC)

Volume 1001

April 2009

LETTER FROM THE DIRECTOR

The Myers-Lawson School of Construction (MLSoC) was established not to simply add to technical understanding; but to add courses, teaching pedagogy, and collaborative opportunities to more fully develop and cultivate the individual students who take part in the degrees and outreach efforts established by the MLSoC. Specifically, the school will concentrate on developing values-based leadership skills, creative learning and research environments, as well as integrating and sustaining the built environment.

MLSoC is committed to construction education at Virginia Tech. We see the long standing building construction degree (1947), the new construction engineering and management degree (2006), as well as the long standing construction opportunities in civil and environmental engineering as the foundation for undergraduate construction education at Virginia Tech. Our aspiration is that the foundation will grow to enhance new venues for collaborative participation for students including a broad spectrum of design, management, and other related disciplines.

The core graduate curriculum was created to provide the basis for competencies of our MS degree students. The core classes look at innovative ways of doing this through case-based, studies-based and project-based learning environments.

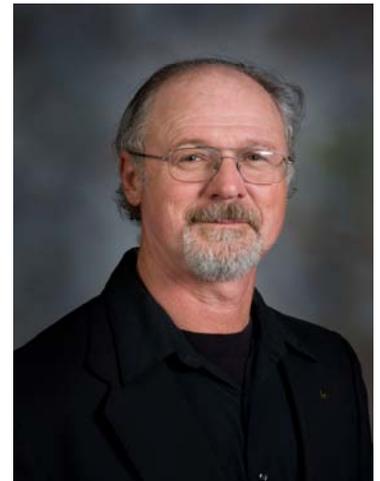
MLSoC looks to enhance both student and faculty opportunities by developing programs and providing the space that is needed. A new state of the art facility is being planned to achieve these goals. This facility will include labs, offices, learning environments and meeting areas; all of this organized to enhance the ultimate goal of collaboration.

We believe in our obligation to the people we work with, the society/community we live in, and the global environment we must sustain and improve. As we set out to achieve our vision of being the *Beacon for Construction Education* at Virginia Tech, we will do it different, we will do it better, and we will provide a forum for our students to grow with the fundamental principles deeply felt and committed to by our graduates and outreach participants. The faculty in the Myers-Lawson School are poised to take on the leadership role for construction as a major player in higher education.

Sincerely,

Yvan J. Beliveau

Director, Myers-Lawson School of Construction



Dr. Yvan J. Beliveau, Director of the Myers-Lawson School of Construction

*" We believe in our obligation
to the people we work with,
the society/community we live
in, and the global environment
we must sustain and improve."*

OUR FOUNDERS

Former Virginia Tech fraternity brothers partner to help establish a new school at Virginia Tech

Long-standing relationships are unique among friends. Books are written about such distinctive friendships. And, for Virginia Tech, the more than 30-year friendship between A. Ross Myers and John R. Lawson, II, that started in their college days in Blacksburg is a dream come true. The two alumni who met as Virginia Tech undergraduates and members of the Sigma Phi Epsilon fraternity shared equally in a \$10 million gift to establish the Virginia Tech School of Construction at their alma mater.

The two alumni, Myers, awarded a bachelor's degree in civil engineering in 1972, and Lawson, who earned a geophysics degree in 1975, are the chief executive officers (CEOs) of two major construction companies, both of which emphasize quality, standards and ethics in all of their business dealings. Myers is the CEO of American Infrastructure, headquartered in Worcester, Pa., and Lawson is the President and CEO of W. M. Jordan Co., with offices in Newport News and in Richmond.

The Myers-Lawson School of Construction (MLSoC) at Virginia Tech is recognized for its strong position of national leadership in construction education and research. The Vecillio Construction Engineering and Management Program (VCEMP) in the Via Department of Civil and Environmental Engineering, and the Building Construction (BC) Department in the College of Architecture and Urban Studies (CAUS) collaborate closely in areas

of research, outreach, service learning, and leadership.

With the new school of construction, "our primary focus is on values-based leadership in the construction industry. We want to build upon an ethical community of construction personnel", said the director Yvan Beliveau, the Georgia Anne Snyder-Falkinham Professor. His thoughts were echoed by Michael Vorster, the David Burrows Professor of Civil Engineering, who stresses the fact that the school "combines the strengths of two excellent programs to establish a new standard for construction education and research."

"My investment in Virginia Tech's School of Construction will provide the industry, including companies like mine, with much needed, well-prepared, high content human capital. Beyond that I believe the school will elevate the learning process to produce leaders prepared to elevate an industry", Myers said.

Lawson concurred, saying: "Virginia Tech has always had good building construction and civil engineering programs, but we have a chance to be the best. There are never enough graduating seniors to fulfill the industry's demand. We have a chance to double the output while

adding many additional programs and features, including possibly some that are unique to construction. I have personally benefited from my school and my industry. I have an obligation to give back."

The school provides "both an engineering and a non-engineering approach to construction education", Beliveau said. "The graduate level work is enriched as students in management, building construction, architecture, and engineering work together and share ideas."

The school of construction was approved by the Virginia Tech University Council and the State Council of Higher Education in Virginia (SCHEV) in early 2006 and provides undergraduates and graduates more choices for pursuing construction education.

Construction accounts for approximately 8-10% of the U.S. gross domestic product and approximately 10% of the gross world product. A successful school of construction will allow Virginia Tech to have major impacts on a variety of aspects of this very important industry. It will continue to unite broad and distinct areas of construction education, research, and outreach at Virginia Tech.

(Below) Announcing the news about the Virginia Tech Myers-Lawson School of Construction: (left to right): Charles Steger; John Lawson, II; Michael Vorster; A. Ross Myers; & Yvan Beliveau

Ross Myers (left) and John Lawson (right): both Virginia Tech alumni and members of the Sigma Phi Epsilon fraternity, enjoy extremely successful careers in the construction industry.



INDUSTRY BOARD

The Industry Board's mission is to support the MLSoC in setting, establishing and retaining its identity, establishing vision, identifying aspirations, goals, and objectives while working with BC and VCEMP to help them set their individual direction and achieving their identity, objectives, and goals.

The Myers-Lawson School of Construction (MLSoC) is a collaboration of the programs of Building Construction (BC) and the Vecellio Construction Engineering and Management Program (VCEMP) at Virginia Tech. Each program brought to the school its own advisory board. To further collaboration, the two boards merged to create the Myers-Lawson School of Construction Industry Board (IB).

The IB works in areas that relate to MLSoC's role within the university, the colleges of Engineering and Architecture and Urban Studies, and the construction community. The IB is apprised of curriculum issues but recognize that curriculum belongs to the faculty. The areas of leadership and innovative learning environments will continue to be the purview of MLSoC, BC and VCEMP. However, ad hoc groups of the IB can help guide and assist in these endeavors.

The Advisory Committee is made up of the leadership of the sub-committees identified below.

- BC Sub-Committee** works to ensure that BC establishes and retains its identity, establishes vision, identifies aspirations, goals, and objectives.
- VCEMP Sub-Committee** works to ensure that the VCEMP establishes and retains its identity, establishes vision, identifies aspirations, goals, and objectives.
- Financial Sub-Committee** helps ensure financial support is obtained that will supplement Commonwealth funding with private donations and increased revenues to assure financial foundation such that strategies for the future will be supported and implemented.
- Alumni Sub-Committee** primary efforts are to involve alumni of BC, CEE and other degrees that link themselves to the construction community, as well as working to keep in touch with graduates of the future.
- Research Sub-Committee** helps guide the school in areas of relevant research.
- Outreach Sub-Committee** is the liaison with industry and helps coordinate continuing education initiatives.

INDUSTRY BOARD MEMBERS

- | | |
|-------------------------------|---------------------------|
| Hank Adams | Larry Kraemer |
| Aimee O. Alix | Ken Lanford |
| Bill Beach | John R. Lawson |
| Richard Bishop | Kirsten Leckszas |
| Susan B.W. Boggs | Samuel L. Lionberger, Jr. |
| Don Boyken | Keith Maddox |
| John Britt | Ken Malm |
| Paul Carter | Steve Massie |
| Vince Cilimberg | Herb Morgan |
| George B. Clarke, IV | Bill Moyer |
| George L. Compo | Aaron Myers |
| Gary Crouch | Ross Myers |
| Doug Dalton | Blake Peck |
| Steve Daves | Charles J. Rainero |
| Larry Dickenson | Tom Rathburn |
| Gilford Edwards | William E. Reiser |
| William D. Fairchild | Jack Roberts |
| Georgia Anne Snyder-Falkinham | Bruce M. Scott |
| Tom Gregory | Fulton Sensabaugh |
| Mitch Haddon | Phillip A. Shucet |
| Gary Hall | Steve Smithgall |
| Jim Harrison | Walter Story |
| Brent Hellmandollar | Robert P. Sutherland |
| Russell Hit | John P. Tarpey |
| Phil Jamerson | Ken Taylor |
| O. Kent James | Leo Vecellio, Jr. |
| Chris Jahrling | Robert H. Wells |
| Art King | Preston White |

COMPANIES REPRESENTED BY THE BOARD

- | | |
|-----------------------------------|------------------------------------|
| American Infrastructure, Inc. | Kenbridge Construction Co., Inc. |
| Anderson & Associates, Inc. | Kjellstrom & Lee, Inc. |
| Balfour Beatty Construction | Kiewit Corp. |
| BE&K Building Group | Lanford Brothers Co. |
| Boyken International, Inc. | McDonough Bolyard Peck, Inc. |
| Branch Highways, Inc. | Mid-Eastern Builders, Inc. |
| Century Concrete, Inc. | Permatile Concrete Products Co. |
| Colonial Webb Contractors | RE Daffan, Inc. |
| Compo Construction Co. | RW Murray Co. |
| Craftmark Homes, Inc. | Scott-Long Construction, Inc. |
| English Construction Co., Inc. | Snyder & Associates |
| Fluor Enterprises, Inc. | The Story Group, Inc. |
| Gilbane Building Co. | The Whiting-Turner Contracting Co. |
| Harkins Builders, Inc. | Tishman Construction Corp. of DC |
| Hensel Phelps Construction Co. | Turner Construction Co. |
| Hitt Contracting Inc. | Vantage Construction Corp. |
| Jack L. Massie Contractors, Inc. | Vecellio Contracting Corp. |
| James G. Davis Construction Corp. | Vertical Marketing, Inc. |
| JE Jamerson & Sons, Inc. | VIRTEXCO Corp. |
| Kanawha Stone Co., Inc. | WM Jordan Co. |

MESSAGES FROM THE DEPARTMENT HEADS

The Department of Building Construction

The Department of Building Construction has been getting settled in our new building. We are now working on developing the lab area and we hope by late spring to have completed a workshop lab for students to do hands-on projects, as well as a Virtual Design and Construction Computer lab to support faculty teaching and research.

I would like to share with you a few other things. Our ACCE accreditation has been renewed for 3 years.

We are going through a search effort to hire a new faculty in the department to replace Mike O'Brien's position. We should appoint a faculty at the assistant/

associate professor level by fall 2009. We are also in the process of raising funds to create a second faculty position. In support of this goal, members of the Building Construction subcommittee of the MLSoC Industry Board are leading the fund-raising effort and, as a first step, organized a golf tournament and wine tasting event in early fall 2008. The event was very successful with over 60 participants in the tournament and over 40 sponsors. We have raised approximately \$41,000. We will continue our fund raising this spring.

We have redesigned our department website to give it a new look (www.bc.vt.edu). Georg Reichard and

Dannette Beane have worked very hard to make this happen.

We have started a Faculty Fellows Industry Experience Program to provide faculty across the school an opportunity to spend a few weeks during the summer within the industry. Hensel Phelps has sponsored a faculty fellow during summer 2008 and plans to sponsor two more faculty members during summer 2009.

The Alumni Trip to Egypt in early January 2009 was a great success. We plan to host a second trip in the next few years. We hope more Alumni and friends can join next time.



Dr. Walid Thabet, Department Head for Building Construction

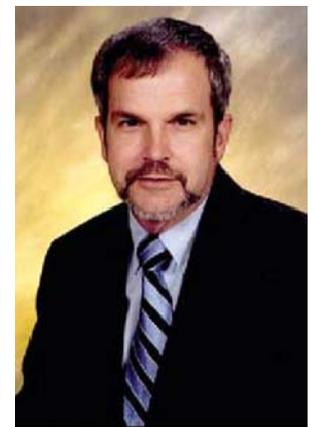
The Via Department of Civil and Environmental Engineering

The Via Department of Civil and Environmental Engineering (CEE) has faced a series of challenges during 2008, and has still remained focused upon its pursuit of excellence in each of its mission areas. Undergraduate enrollment within the Department are at historical record levels, with nearly 700 students pursuing BSCE degrees within the sophomore to senior academic ranks. In addition, over 250 full-time graduate students (with approximately 45% pursuing Ph.D. degrees) reside within the Department. Multiple reductions in State funding have yielded significant impacts on the financial resources of the Department and have negatively impacted class section sizes and the ability to offer certain courses on the same frequency as in the

past. In the midst of these challenges the CEE Department has continued to maintain its high-quality educational programs through the efforts of a dedicated faculty and staff. US News and World Report rankings place both the Department's undergraduate and graduate CE programs within their list of top ten. The Department likewise completed a successful ABET accreditation visit in October 2008 regarding the BSCE degree program. Even with a slow-down in the economy employment opportunities for CEE graduates at both the undergraduate and graduate levels have remained strong. The Myers-Lawson School of Construction remains a high priority of the Department, with several faculty actively

involved in the instruction, research and outreach programs of the School. Enrollment demands associated with the recently-developed BS in Construction Engineering and Management degree program (while significant) are being managed within the CEE Department as part of its commitment to the School.

Academic Year 2009-2010 is expected to begin with a change of leadership of the CEE Department as Dr. W.R. Knocke will be stepping down as Head after fifteen years of service in this role. Finalists will be interviewing for the position in Winter 2009, with the hope that the new Head will be in place by August 2009.



Dr. William Knocke, Department Head for The Via Department of Civil and Environmental Engineering

OUR FACULTY



Dannette Gomez Beane
Coordinator of Outreach
& Career Development,
Building Construction
MA, Virginia Tech
BA, Hollins University



Yvan Beliveau
Director, Myers-Lawson
School of Construction
& Snyder-Falkinham
Professor, Building
Construction
PhD, Purdue University
MS, University of Vermont
BS, University of Vermont



Jesús de la Garza
Vecellio Professor,
Civil & Environmental
Engineering
PhD, University of Illinois
MS, University of Illinois
BS, Tecnológico de
Monterrey



Christine Fiori
Assistant Director of
Undergraduate Studies,
Industry Relations and
Outreach, Myers-
Lawson School of
Construction
PhD, Drexel University
MS, Drexel University
BS, Drexel University



Michael Garvin
Assistant Director of
Graduate Studies and
Research & Associate
Professor, Myers-Lawson
School of Construction
PhD, Massachusetts Insti-
tute of Technology
MS, Massachusetts Insti-
tute of Technology
BS, U.S. Military Academy



Brian Kleiner
Professor, Industrial &
Systems Engineering
PhD, State University of
New York
MS, State University of
New York
BA, State University of
New York



Kihong Ku
Assistant Professor,
Building Construction
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MA, Harvard University
MA, Seoul National
University
BA, Seoul National
University



Andrew McCoy
Assistant Professor,
Building Construction
PhD, Virginia Tech
MS, Virginia Tech
BARCH, University of
Virginia

OUR FACULTY



Thomas Mills
Associate Professor,
Building Construction
MS, Virginia Tech
BARCH, Virginia Tech



Annie Pearce
Assistant Professor,
Building Construction
PhD, Georgia Institute of
Technology
MS, Georgia Institute of
Technology
BS, Carnegie Mellon
University



Georg Reichard
Assistant Professor,
Building Construction
PhD, Graz University of
Technology
MS, Graz University of
Technology



Sunil Sinha
Associate Professor, Civil
& Environmental
Engineering
PhD, University of
Waterloo
MS, University of Waterloo
BE, Birla Institute of
Technology



Walid Thabet
Department Head &
Associate Professor,
Building Construction
PhD, Virginia Tech
MS, University of
Waterloo
BS, Kuwait University



Michael C. Vorster
David Burrows Professor,
Civil & Environmental
Engineering
PhD, University of
Stellenbosch



Deborah Young-Corbett
Assistant Professor, Myers-
Lawson School of
Construction
PhD, Virginia Tech
MS, Virginia Tech
MS, North Carolina State
University
BS Virginia Tech

OUR STAFF



Ursula Halferty
Program Administrator,
Building Construction



Stephanie Randel
Program Administrator,
Myers-Lawson School of
Construction



Amanda Lucas
Program & Education
Support Specialist, Myers-
Lawson School of
Construction



Sandy Simpkins
Administrative & Office
Specialist,
VCEMP



COLLEGE DEANS



Jack Davis
College of Architecture
and Urban Studies



Richard Benson
College of Engineering

RECENT FACULTY ENDEAVORS

Jesús de la Garza

- Research**—Awarded \$2.86 million dollar contract from the Virginia Department of Transportation in support of the CHAMPS (Center for Highway Asset Management Programs) mission in the area of privatized highway maintenance
- Scholarship**—Published a paper with the Transportation Research Record on Sampling Procedures for Performance-Based Road Maintenance Evaluations
- Teaching**—Received the College of Engineering's Dean's Award in Teaching Innovation
- Service**—Appointed as a member of the National Research Council's Board on Infrastructure and the Constructed Environment (BICE)

Michael Garvin

- Research**—Awarded \$305,000 grant from National Science Foundation as Co-Principal Investigator to explore the impacts of early planning decisions upon a facility's total cost of ownership; \$28,000 contract from Innovative Project Delivery Division of VDOT as Principal Investigator to investigate contract provisions and risk allocation in design-build contracts
- Scholarship**—Co-authored a chapter with Dr. Charles Y. J. Cheah in "Policy, Finance & Management for Public-Private Partnerships"; published three journal articles; a plenary speaker at the 2008 Specialty Conference on Leadership & Management in Construction
- Teaching**—Second offering of the core graduate course Pre-Construction Planning and introduced the core graduate course Facilities Integration; Construction Management course
- Service**—Report Facilitator for the AASHTO/FHWA scan study published in March 2009; continued service as Asst. Specialty Editor for Journal of Construction Engineering & Management and as a member of Editorial Board for Public Works Management & Policy

Thomas Mills

- Research**—Continuation of AGC Klinger Research Award for Construction Workforce Retention and Recruitment; continuation of leadership in the NIOSH funded Center for Innovation in Construction Safety and Health Research
- Scholarship**—Co-authored journal article, two conference proceedings and trade publication article; has conference articles in review; Hensel-Phelps Construction Company Faculty Fellowship with the Mid-Atlantic and Capital District offices.
- Teaching**—Intro to Building Construction I & II and IT in Design & Construction; Production Planning & Process Design; Design-Build
- Service**—Completed term as VP of Sigma Lambda Chi, elected President, Sigma Lambda Chi International Honor Society for Construction Education; serving on Technical and Science Committee of CIB W099 "Working Together: Planning, Designing and Building a Safe and Healthy Construction Industry Conference"; member of the Editorial Advisory Board of trade publication "Commonwealth Contractor" ABC Virginia; continued facilities management of Bishop-Favrao Hall

Georg Reichard

- Research**—First phase of NASA funded grant (\$185,000) for the "Development of a Model for Predicting the Transmission of Sonic Booms into Buildings"; conducted an MLSoC supported educational research project with elementary students: "Investigation of solar and thermal performance of LEGO houses"
- Scholarship**—Published journal article in the Journal of Construction Engineering and Management, and two conference papers; plenary speaker at the US-European Conference of Metropolitan Regional Councils (METREX)
- Teaching**—Graduate course Applied Building Sciences; undergraduate courses Building Systems Technology I & II and the online course "IT in Design and Construction"
- Service**—Development of the CAUS and Building Construction webpages; management of the MLSoC webpage

Christine Fiori

- Research**—received the 2008 Associated General Contractors Klinger Award to conduct research on the construction industry labor shortage; presented a seminar on slope stability, Universidad de Piura & worked with their College of Engineering to develop a Ph.D. program focusing on civil infrastructure in Peru
- Scholarship**—co-authored "Construction Management Fundamentals", a textbook published by McGraw Hill; co-authored "Your Role in the Green Environment", a training module used by the National Center for Construction Education and Research
- Teaching**—Building and Materials: Geotechnical Issues in Construction; Topics and Methods in Construction Management in the Global Village; Design/Build Studio
- Service**—2008 CAUS Excellence in Outreach Award recipient; participant in the Belize Trip where build improvement projects were completed at the Our Lady of Bella Vista Primary School; returned to Belize to lead construction efforts in four schools there with PricewaterhouseCoopers, LLC

Andrew McCoy

- Research**—CAUS Bi-Annual Research Symposium; presentations for: RICS COBRA Conference '08 & Construction Research Congress '09
- Scholarship**—Several articles published in various journals including The Journal of Construction Innovation, European Journal of Innovation management, and proceedings of RICS COBRA Conference 2008 and Construction Research Congress 2009; recipient of the International ARCC King Award for excellence in research 2008
- Teaching**—Materials and Methods I & II; Construction Practice II Design/Build Lab; Integrated Leadership Studio; Innovation in Construction; Invited Faculty for Spain and Portugal Abroad
- Service**—Partner in the 2009 DOE Solar Decathlon; reviewer for the ASCE Journal of Construction Engineering and Management, the Journal of Construction Innovation and the Journal of Construction Management & Economics; reviewer for the Construction Research Congress 2009 & ASC 45th Annual Conference

Annie Pearce

- Research**—Awarded \$305,000 grant from National Science Foundation as Principal Investigator to explore the impacts of early planning decisions upon a facility's total cost of ownership; awarded an additional project with the Giles County Industrial Development Authority; completed projects with the US Postal Service, the National Center for Construction Engineering and Research, the National Defense Center for Environmental Excellence and for the Lanford Bros Construction company—for the combined value of over \$200,000
- Scholarship**—Co-authored "Your Role in the Green Environment"; published one journal paper & three refereed conference papers
- Teaching**—Topics and Methods in Construction Research; Construction Principles I: Sustainable Facility Systems; supervised one PhD student & 7 MS students as primary advisor
- Service**—Served on various advisory boards and committees, including: VT Environmental coalition, Virginia Sustainable Building Network; Center for Health Design; BC faculty search committee; CAUS committees for diversity & honorifics; University Energy and Sustainability Committee at Virginia Tech, developing the University Climate Action Commitment & Sustainability Plan

Walid Thabet

- Research**—Awarded \$63,230 grant from Bentley Systems, Inc., as Principal Investigator to develop virtual construction tools
- Scholarship**—Published several articles in various journals including European Journal of Innovation Management, Journal of Construction Innovation, and Journal of Information Technology in Construction (ITcon)
- Teaching**—Building Construction senior year courses (Construction Practice I & II) & the BC Integrated Studio/Lab Courses
- Service**—Session chair at various international conferences including CIB-W78 (Santiago, Chile 2008) and ICCCBE XII (Beijing, 2008) & organizer and conference chair for the CIB-W78 2010 (Cairo)

FEATURED FACULTY

Brian Kleiner

Brian Kleiner serves as director of both the Center for Innovation in Construction Safety and Health Research, and the Macroergonomics and Group Decision Systems research Laboratory at Virginia Tech.

He is currently an adjunct professor of Civil and Environmental Engineering, an adjunct professor of Building Construction and is a core faculty member in the Myers-Lawson School of Construction. He has also been a College of Engineering Fellow for the years 2005-2008. His educational background has balanced the behavioral and design aspects of Industry, with degrees in both psychology and engineering which is appropriate, given

his research focus on work system analysis and design, leading to worker, group and organizational performance, safety/health, culture and large scale improvement.

Since 2005, Kleiner has served as Associate Editor (Human Factors) Reviewer for the IEEE Systems and Information Engineering Design Symposium through the National Science Foundation. In 2007, Kleiner became a member of the Institute of Medicine (IOM) Committee to Review Traumatic Injury Research Program at NIOSH.

The Center for Innovation in Construction Safety and Health Research has been performing strategic planning, establishing a framework within which a

broader effort for occupational safety and health can emerge. It was awarded with a prestigious national design award by the Human Factors and Ergonomics Society for the recently completed UPS project.



Kihong Ku

Kihong Ku leads research in the area of project management of high-profile buildings as well as the application of information technology to facilitate and improve the design and construction process of such buildings. Current research projects focus on the implications of Building Information Modeling (BIM) which examine new modes of practices by fundamentally rethinking traditional paper based construction processes. This involves the investigation of digital fabrication utilizing parametric modeling, prototyping and fabrication tools for building construction.

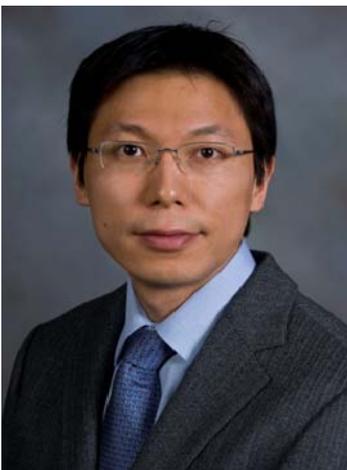
Ku received a BS and MS in Architecture from Seoul National University, and subsequently a Master in

Design Studies and Doctor of Design from the Graduate School of Design at Harvard University.

He has worked on several projects over the last year – two of which are "Safety Training Applications for Virtual Worlds" with Yogesh Gaikwad and the construction innovation case study research "The Bishop-Favrao Hall at Virginia Tech" with Wei Loon Ooi. His primary outreach activities include being a faculty advisor on the "Kids for Change" project in collaboration with Dr. Mike Evans, directing sustainability curriculum development for the Boys & Girls Club of the New River Valley. This project focuses on an afterschool program of 6th-8th grade middle school children. The curriculum addressed STEM knowledge and skills engaging ICTs. In addition to

which, Ku has also served on the Design Committee of the Yi-Sang Yoon Concert Hall, Tong Yeong City, Kyoungsangnam-do, Korea, since December 2008. He has also served as an advisory member to Eui-Chang, Chin, the Mayor of Tongyeong City, on design management and project delivery. This project involves high-profile architect Frank O. Gehry.

At Virginia Tech, Ku continues to serve on the University Building Committee and will do so until the spring of 2011. His teaching delivers knowledge through the case studies methodology and also applies information technology to create new effective learning environments.



FEATURED FACULTY

Sunil Sinha

Since the summer of 2007, Sunil Sinha has served as Associate Professor of Civil & Environmental Engineering. 2001 through 2007, Sinha held a joint appointment as an assistant professor in the departments of Civil & Environmental Engineering and Computer Science & Engineering at Penn State. He is also an adjunct professor of Systems Design Engineering at the University of Waterloo, Canada, where he received both his PhD and Master's Degrees.

Sinha's current research activities address problems in the area of assessment technologies and decision-making methodologies for the rehabilitation of large-scale civil infrastructure systems, especially municipal water and wastewater infrastructure systems. Sinha also serves as the Co-Director of the SWIM (Sustainable Water Infrastructure Management) research center,

where the overall goal is to transform the nation's capability to build, monitor, control and renew water infrastructure systems to be both resilient and sustainable. He is currently working on seven funded research projects, totaling some \$2.5 million. He is in the process of developing a sustainable water infrastructure management system. His research includes the development of an integrated water and wastewater pipe management system with recent sensor technologies and non-destructive testing tools. This research has the potential to change the utilities' ability to rate the condition and performance of its pipeline infrastructure system and to develop a rational repair, rehabilitation and replacement program.

Sinha has authored more than 70 technical publications in refereed journals, conference

proceedings, and reports. He is a member of the American Society of Civil Engineers, American Society of Engineering Education, American Society of Testing Materials, Canadian Society of Civil Engineers, and the North American Society for Trenchless Technology.



Deborah Young-Corbett

As a new faculty member, Deborah Young-Corbett has been in the process of building a research and instructional program in her expertise domains. She is developing research/educational programs in three technical areas: indoor environmental quality, innovative technological solutions to control construction health and safety hazards, and industrial systems engineering of construction processes.

In her research endeavors, she submitted proposals to external agencies such as the National Institute for Occupational Safety & Health, the National Institutes of Health, the National Science Foundation, and the Construction Industry Institute. She was awarded four internal grants from

university entities: The Center for Innovation in Construction Safety & Health (CICSH); the Institute for Critical Technology & Applied Science (ITCAS); and, the Institute for Society, Culture & the Environment (ISCE). These internal funds were used to conduct pilot studies regarding construction silica dust control, indoor environmental quality evaluation of existing housing, and pervasive computing sensing of carbon monoxide. She was also invited to join the leadership team of the CICSH and the Interdisciplinary Team for Pervasive Computing, sponsored by the Office of the Vice President for Research.

In terms of scholarship, she has had three manuscripts accepted for publication by peer-reviewed journals, two for publication in peer-reviewed conference proceedings, and has been accepted to give

presentations at three professional conferences. She is currently working on revisions of two additional journal manuscripts. She is a member of two professional committees of the American Industrial Hygiene Association on indoor environmental quality and computer applications. She has served as a reviewer for the Journal of Construction Engineering and Management and the Construction Management and Economics journal. Further, she has served on external review panels for the National Science Foundation.

Young-Corbett was also selected as a fellow for the highly competitive American Society of Civil Engineers Excellence in Civil Engineering Education (ExCEED) program, a summer training program to enhance teaching effectiveness.



OUR STUDENTS

The School of Construction is made up of students from the programs of Building Construction, Construction Engineering & Management and the Vecellio Construction Engineering Management Program. Both undergraduate and graduate students in the construction programs at Virginia Tech are encouraged to excel in the areas of research, service, outreach, and leadership.

Myers-Lawson School of Construction Assistantship Awardees



Yong Han Ahn

Hometown: Yesan, Chungnam, South Korea

Undergrad Studies: Purdue University

Primary Interests: Sustainable Construction, Construction Education and Facilities Management

Work Experience: A financial manager with Imperial Development

Career Goals: I want to be a professor in the United States. I am currently interviewing with several construction programs



Suchismita Bhattacharjee

Hometown: Kolkata, India

Undergrad Studies: Jadavpur University & Michigan State University

Primary Interests: Energy efficiency policies implemented in different countries & analyze their effectiveness

Work Experience: JT Builders (2007); WEO Neil Construction (2006); Agrawal and Agrawal (2003)

Career Goals: To become a professor



Somik Ghosh

Hometown: Kolkata, India

Undergrad Studies: Jadavpur University

Primary Interests: The impact of lean construction on construction safety; researching literature in regards to construction accident and causation models.

Work Experience: Construction Manager for the AJ Damman Co. (2007-2008); Trainee Architect for Agrawal and Agrawal, Kolkata, India (2003)

Career Goals: To obtain a faculty position as well as consultation work



Martha Gross

Hometown: Norfolk, VA

Undergrad Studies: Pennsylvania State University

Primary Interests: Infrastructure development, transportation finance, public-private partnerships

Work Experience: Construction Engineer, Skanska (2000-07); Adjunct Professor, The Citadel (2004)

Career Goals: I look forward to working with innovative project-delivery strategies to construct and rehabilitate transportation infrastructure and eventually returning to teaching



Sandeep Langar

Hometown: Jammu & Kashmir, India

Undergrad Studies: Mumbai University

Primary Interests: Green Building Information Modeling, Efficient Envelope & Life Cycle Analysis, Design & Construction sustainable alternatives

Work Experience: Various renowned Design Build & Architectural firms in India on a range of commercial, corporate and landscape projects

Career Goals: To become a building specialist, capable of providing net carbon zero alternatives. Also, to find sustainable solutions for the industry from a holistic perspective that makes the design/construction process more environmentally responsive, economically feasible and socially acceptable



Chris Strock

Hometown: Blacksburg, VA

Undergrad Studies: Virginia Military Institute

Primary Interests: Public Health Infrastructure in Resource-Poor Communities

Work Experience: DPR Construction; Timmons Group

Career Goals: To incorporate scholarship with service towards meaningful and lasting public health infrastructure projects in resource-poor communities

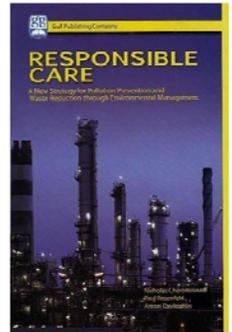
Constructor's Consortium



The Constructor's Consortium (CC) is a student organization made up of mostly building construction undergraduate students. The group seeks to bring together students of construction at Virginia Tech through offering t-shirt contests, hosting socials, organizing employer visits, participating in Habitat for Humanity and other community service, as well as playing on intramural sports teams.

Building Construction Student Co-authors Textbook

Anton Davletshin is a Building Construction student specializing in design and construction management of green building. Anton has held internships with N&P Ltd. and for Bittinger Associates Construction Company. His knowledge and experience has been combined with that of Nicholas Cheremisinoff and Paul Rosenfeld to create a primer on responsible environmental management.



Their text is designed to introduce terminology, methodology, tools, procedures and practical guidance for incorporating efficient pollution prevention strategies into the overall business plan. It states that each corporation has the responsibility to protect and control its management of waste and pollution. A company that fails will ultimately inflict a negative impact on its bottom line, especially in financial performance. "Responsible Care" delivers the vital and required strategies for industrial managers to advance their success through waste reduction and positive management practices.

INTERNSHIPS & FULL-TIME EMPLOYMENT

For several years, the departments of Building Construction and Civil & Environmental Engineering have hosted a Construction Career Fair. Once the Myers-Lawson School of Construction formed in 2006, the departments agreed to host two events with construction management being the focus of the Construction Career Fair while the separate Civil & Environmental Engineering Fair focuses on design.

The now MLSoC Career Fair hosts over 100 construction related firms every fall and spring. These two-day events typically sell out in minutes through an electronic registration system. During the first day of the event, company representatives, students, and faculty alike enjoy a half day of exhibition with table top displays and giveaways for each firm. After the closing of the

exhibition, all are invited to an informal social where much of the networking and negotiating continues. The second day, companies are able to conduct formal interviews of students courted from the day before. Often, internships and full-time offers are extended on the spot. The students of the MLSoC take advantage of the aggressive recruitment conducted at these events as well as other recruitment events throughout the year with evening company information sessions and hosted field trips to visit firms. With a 100% placement rate in full-time employment, the students of the MLSoC fulfill their dreams of working in the area of construction. Those younger students seeking a summer internship are just as successful in

securing a full-time, temporary position. Students' experiences in an internship vary from office work to assistant project management. Although internships are not required in the curriculum, most students understand the value of the experience and participate every summer and even winter breaks before graduation.



Virginia Tech Students Crowned National Pre-Construction Champions

A team of 6 students traveled to Sparks, Nevada in February 2009 to compete in the Associated Schools of Construction National Pre-Construction competition. Under the supervision of Dr. Chris Fiori, they competed against 13 other teams from universities across the country, such as Arizona State, California Polytechnic, Colorado State and Brigham Young. Among these competitors, Virginia Tech finished in first place. In addition to their first place finish, team member Sheila Matarazzo received the MVP award for the competition.



The team consisted of five seniors, Sheila Matarazzo, Lillian Miller, Jeff Simmons, Brandon Knight and David DuBose and one sophomore, Jacob Brown. The competition problem was sponsored by PCL Construction and was completed in two phases, culminating in a presentation to the PCL judges.

The first phase of the project was completed prior to the team's arrival in Nevada and was submitted at the initial meeting with the PCL judges the morning of the first competition day. Teams then received their Phase II problem at 6:00am on day one of competition and were required to submit their solutions at 10:30pm that evening. The problem involved a new office building and required the students to develop a plan for

providing pre-construction services as well as a plan to negotiate a contract to provide construction. These included estimating, scheduling, value engineering and constructability reviews, site logistics, equipment selection and a LEED credit evaluation.

The teams were required to present their solutions to the PCL judges the following day. The VT team presented strongly and their solution included an innovative fly-through of their site phasing plans. The PCL judges requested their presentation for use in their internal company training, quite a complement to the team. They proudly represented Virginia Tech and the Myers-Lawson School of Construction at this national competition.

Construction Management Association of America



The Mission of the CMAA is "to promote and enhance leadership, professionalism, and excellence in managing the development and construction of projects and programs." The Student Chapter aims to provide Virginia Tech students who are interested in pursuing Construction Management as a profession with a sense of the roles and responsibilities of a Construction Manager. Aiming to abide by and encourage our Mission through creating an Identity for Construction Management students, exposing students to professional aspects by interacting and networking with CMAA chapters as well as other organizations and individuals in the AEC industry. The CMAA hopes to assist students in developing leadership and professional skills as well as engage in community outreach activities.

To achieve the Mission, the Student Chapter participates in multiple activities—hosting guest lecturers for information sessions and discussion panels, organize field trips, participating in webinars, and attend two National CMAA Events each year.

CMAA is leading the growth and acceptance of Construction Management as a professional discipline that can add significant value to the entire construction process, from conception to ongoing operation. Membership in CMAA includes more than 3,000 firms and individuals: architects, engineers, contractors, owners, educators, students...everyone with a stake in the construction industry's success.

MLSoC Student Chris Strock Wins Graduate Service Award



Two Students Help to Renovate the Historic Anne Spencer House

As part of the efforts of the Lynchburg City-based organization Rebuilding Together, which is making repairs and restoring homes for low-income families, the Anne Spencer House on Pierce Street, built in 1903, is getting some much-needed structural work free of charge.

"We asked what we could do," student Ren Hutt said. "We wanted to get some hands-on experience and do a little bit for the community."

Hutt and his classmate, Will Cook, are both Lynchburg natives majoring in Building Construction. They participated in the project not only to help Lynchburg, but also to gain practical experience and course credit.

"What they get out of this is the knowledge that when you rip into a wall, you don't know what you're going to find," said Bob Luse, a general contractor from Lynchburg overseeing the project. "They're learning to be innovative, and they're having to adapt."

The work was rather involved, especially considering the historic nature of the home. Luse, Hutt and Cook had to custom-build various components in order to maintain the integrity of renowned Harlem Renaissance poet's home. Luse became familiar with Anne Spencer's legacy several years ago, when he got a unique look at 1313 Pierce St. He and his wife had gone to see the home one day, but no one was available to give a tour. A man sitting on the porch reading the newspaper took notice and offered to show them around.

It was Chauncey Spencer, Anne's youngest son, now deceased, who helped pave the way for the creation of the famous Tuskegee Airmen. "We spent the whole afternoon with him," Luse said. "He gave us a tour and read poetry to us."

Chris Strock's classroom extends well beyond Virginia Tech. He is the student organizer of the Poverty Awareness Coalition for Equality (PACE) at the university, and in doing so, has helped to champion service projects and fundraising activities to generate support for various health and hygiene initiatives in Belize.

In addition, Strock volunteers his engineering expertise for a hospital in Nigeria, Partners in Health (PIH) in Haiti, and with Peacework, also in Belize. Strock, of Blacksburg, was the recipient of the University's Graduate Student Service Award in 2008 for his exceptional work as a member of the Myers-Lawson School of Construction. He already holds a MLSoC Assistantship and a Vecellio Fellowship for his academic prowess.

"In my 17 years as a university faculty member and adviser to many students, I have never had the honor to work with someone as committed and dedicated to helping others as Chris Strock," wrote his faculty adviser Anthony Songer when compiling the award nomination. "His actions speak volumes to his unparalleled commitment to the betterment of the global community."

Among Strock's accomplishments in the past year, he has conducted drinking water assessments and developed distribution system construction plans for multiple schools and hospitals throughout Nigeria for the Nigeria Baptist Convention as a volunteer with Nigeria Faithful Works. He took his third trip to Nigeria in 2007. He also designed a public latrine and waste treatment system for Hôpital Sacré Coeur in Milot, Haiti as a volunteer with the Center for the Rural Development Foundation (CRUDEM) of Milot (in Haiti) which has the operating responsibility for Hôpital Sacré Coeur Foundation. The

latrine is currently under construction and will serve up to 500 people per day. He continues to work with the board as an advisor for the hospital's future expansion.

He and his colleagues from the School of Construction are working with industry leaders to raise \$250,000 for a bridge he designed that will serve a rural village in the Central Plateau of Haiti and to provide people with access to free health care, schools, and markets. This work is a continuation of a relationship with Partners in Health and Zanmi Lasante. This year's University Common Book, *Mountains Beyond Mountains*, details the story of Partners in Health's beginnings.

Strock was among 17 Virginia Tech students, and seven faculty, staff, and alumni who worked side by side on a variety of school improvement projects for the Our Lady of Bella Vista primary school in Belize. The school serves over 1,000 kindergarten through eighth grade students.

Songer and Christine Fiori, Assistant Director of Undergraduate Programs, Industry Relations, and Outreach for the School of Construction, led the group to southern Belize to accomplish four significant projects at Our Lady of Bella Vista.

In addition to his participation in the spring 2008 trip to Belize, Strock devoted the better part of last year to the design of water filtration/rain water collection systems at three rural schools.

"In collaboration with Peacework, he identified critical areas of need. He then volunteered to supervise a group of Rhodes College students in the construction and implementation of the collection/filtration system at three Belizean primary schools over the summer of 2007," Songer said.



Peacework's Executive Director Stephen Darr added, Strock's "skills and passion for service to humanity is exemplary of the university's motto and the mission of this institution of higher education in the global society."

DEGREE PROGRAMS

THE DEPARTMENT OF BUILDING CONSTRUCTION

Bachelor of Science, Building Construction

The BS BC Degree is offered to students in the College of Architecture and Urban Studies who wish to pursue a career in the construction/development industry. The program provides undergraduate students with a complete and diversified grasp of the building industry through technical and managerial courses which emphasize self-motivation and imagination. The curriculum includes 134 credit hours of structural, mechanical, and electrical systems, and related subjects. Management subjects such as construction financing, contracts, planning, and other technologies help familiarize the student with concepts and skills essential in the building industry. Construction materials, equipment, and procedures are studied in a classroom setting reinforced by visits to ongoing construction sites.

Students also gain experience in construction drawings and specifications and their importance to the successful execution of building contracts and projects. Management topics include: organizational, financial, and legal structures for the business and project, estimating and bidding strategies, contracts, and planning and scheduling techniques. The case study method is used at various times in order to develop the student's ability to define problems, identify choices, and recognize the most critical elements in a variety of situations. The student can choose from the two tracks of Construction & Design and Development, Real Estate & Construction.

Master of Science, Building Construction

The Master of Science in Building Construction at Virginia Tech is awarded at completion of 30 credit hours. The degree offers the opportunity for advanced study and research in specialized areas related to building design, construction, and operations over a broad range of scales, providing the basis for diverse career paths and/or entry into a Ph.D. level program. While an undergraduate degree in these or related fields is not required, applicants must demonstrate relevant background and professional experience. They must also demonstrate the capability for undertaking advanced academic study. In the absence of relevant professional experience, additional prerequisites may be required.

Students will develop their own program of study in cooperation with appropriate faculty and in consideration of the courses and facilities available. Faculty associated with the MS Building Construction program are actively teaching, researching, and consulting in the following concentrations: Construction, Production, and Project Management; Design/Construction Integration; Building Sciences; Construction Automation; Construction Visualization; Sustainability; Safety.

PhD, Environmental Design & Planning, Construction Focus

The College of Architecture and Urban Studies offers a college wide Ph.D program in Environmental Design and Planning. A goal of the program is to educate researchers, teachers and advanced level practitioners in the fields of architecture, building science, construction, landscape architecture, interior design, and planning and urban studies while advancing the knowledge base in these fields.

THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Bachelor of Science, Civil Engineering

The Charles E. Via, Jr. Department of Civil and Environmental Engineering, which is ranked in the top 10 accredited civil and environmental engineering departments by the US News and World Report survey, is one of the largest programs in the United States. The Department has 45 full-time faculty, 550 undergraduate (sophomore through senior level), and 275 graduate students. Civil engineers are the principal designers, constructors, operators, and caretakers of many of the constructed facilities and systems that contribute to the high quality of life enjoyed in the United States. The Charles E. Via, Jr. Department of Civil and Environmental Engineering offers educational programs in all areas of civil engineering practice.

Master of Science in Civil Engineering, Emphasis in Construction

The Vecellio Construction Engineering and Management Program (VCEMP)
The MS CE Degree in the College of Engineering has been designed to prepare students for an advanced degree in civil engineering with an emphasis in construction engineering and management. The curriculum and course requirements are structured to allow students the flexibility needed to achieve their full potential and realize their personal aspirations for success in the construction industry. Faculty play a major role in advising students as they embark on and progress through their studies. Faculty work with students to develop a program of studies that will help to develop: skills in written and oral communication; a depth of knowledge in Construction Engineering and Management; a breadth of knowledge in construction engineering and management, engineering, business or any other mutually agreed area by completing elective courses in these areas; skills in independent and creative thought through the completion of a required final examination and, if selected, a dissertation, thesis or report.

PhD in Civil Engineering, Emphasis in Construction

Ph.D. students in the Civil Engineering Construction track must complete an approved program of study comprising a minimum of 90 credit hours of graduate study beyond the baccalaureate. Students must complete a Ph.D. dissertation that makes up between 30 and 60 hours of the total.

DEGREE PROGRAMS (cont)

THE MYERS-LAWSON SCHOOL OF CONSTRUCTION

BS Construction Engineering & Management (CEM)

Started fall 2006, the Myers-Lawson School of Construction offers students in the College of Engineering a Bachelor of Science Degree in Construction Engineering and Management. This degree is designed for students who wish to pursue a career in the construction industry.

The focus of this degree is construction management with engineering and business management as additional major areas of study. The degree retains an emphasis on engineering, with a focus on construction theory and applications, while providing students the opportunity to define the areas of business management they wish to study to complement their career goals. Within a few years of curriculum completion, graduates of the Construction Engineering and Management program should be able to combine skills gained through academic preparation and post-graduation experience so that they can:

- Identify, integrate and manage the technical, material, financial, legal and personnel administration that support construction operations, projects and organizations throughout the project lifecycle
- Analyze and design structural elements and systems required for construction purpose; develop, plan and implement construction operations and processes that are safe, efficient, cost effective, environmentally sensitive and socially aware
- Lead construction project teams toward common project objectives by adhering to values-based principles and demonstrate effective communication, teamwork, and leadership skills, as well as the professional and ethical behavior that are the necessary complement to technical competence
- Develop the foundation of knowledge to prepare themselves to embark upon a lifelong journey of professional development and learning which may include professional licensure or certification, graduate level education, continuing education courses, self-directed study and active involvement in the construction community

PhD in Construction

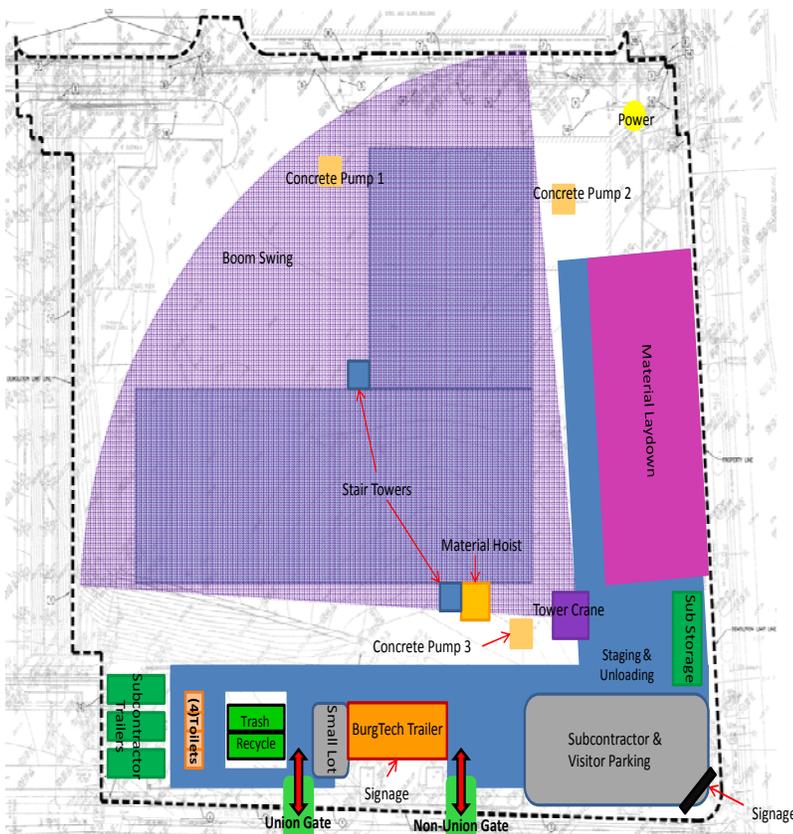
The PhD in Construction program is in the process of being developed with a March 2009 external peer review. Expected initiation of the program is hopeful by Fall 2010.

MBA/CM Double Degree Program

This program, to be offered starting the Fall Semester 2010, is a two degree program between the Myers-Lawson School of Construction and the Pamplin College of Business. This program enhances both of the schools as well as the student interaction and learning. A student graduating from this double degree would receive an MBA and an MSCE; or an MBA and an MSBC.

Limited to no more than ten students entering per year, it is hoped that a student could complete the degree in four semesters. If a student needs some background courses in construction, the student may be required to take summer courses before starting the program. The primary student served would be someone who has a minimum of three years of professional experience.

The curriculum offered has a requirement of 33 credit hours in the MBA program. These include all courses in the current core MBA curriculum less the two courses on MBA careers. Further, the curriculum requires 11-13 credit hours from the Core area of the degrees supported by MLSoC—MSCE and MSBC. In addition, students are required to take 3 elective courses in construction related areas from the BC graduate courses and/or the CEE graduate courses in the construction area. The student will work with an advisor to get a cluster of courses that complement each other. As this is a professional program, it is expected that students would do courses only; however, there is an opportunity for a student to do a P&R or Thesis if their degree options allowed.



(Left) An example of student work illustrating site logistics

RESEARCH AND DISCOVERY

International Activities

Spanning the Globe in Search of Lessons for Highway Public-Private Partnerships

When Professor Mike Garvin agreed to participate in an international scan of highway public-private partnership (PPP) programs with 8 other professionals, he could not fully appreciate what he was getting himself into. After visiting 4 countries and 2 continents while traveling around the globe from June 13th to 26th this past summer, he understood that this was no vacation. What it was, however, was an unparalleled opportunity to meet with experienced public and private sector representatives in Australia, Portugal, the United Kingdom and Spain about PPP programs and projects.

The International Technology Scanning Program, sponsored by the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), and the National Cooperative Highway Research Program (NCHRP), evaluates innovative foreign technologies and practices that could significantly benefit U.S. highway transportation systems. This approach allows for advanced technology to be adapted and put into practice much more efficiently without spending scarce research funds to re-create advances already developed by other countries. Since 1990, more than 75 international scans have been organized on topics such as pavements, bridge construction and maintenance, contracting, intermodal transport, organizational management, winter road maintenance, safety, intelligent transportation systems, planning, and policy. Scan reports are available electronically and can be accessed on the FHWA's Office of International Programs Web site at www.international.fhwa.dot.gov

Garvin acted as the Report Facilitator for this particular scan, responsible for preparing summary and final written reports as well as presentations that synthesized the scan's findings and recommendations. Comprehensive highway public-private partnership (PPP) programs are relatively new to



the United States and not widely used. In contrast, the countries visited have extensive and, in some cases, long-term experience with infrastructure PPPs, particularly highways. This presented a unique opportunity to capitalize on the host nations' knowledge and experience where tested policies and practices are in place. The overall purpose of the scan was to (1) examine programs, policies, and practices used by other countries that actively solicit and involve the private sector in the delivery of highway infrastructure; (2) document lessons learned; and (3) make implementation recommendations that will improve U.S. policy and practice.

After meeting with over fifty representatives of the public and private sector during presentations, roundtable discussions, and site visits, the scan team learned a significant amount about established PPP programs during its visits with the host countries. The team identified several critical points that it consistently observed across the nations:

- *PPPs are an effective strategy for delivering highway projects, and they are service arrangements as much as financial ones*
- *Potential PPP projects must be analyzed, selected, structured, and procured thoughtfully to preserve public interests*
- *Managing the partnership over the life of the contract is critical to providing the services expected and maintaining the public-private relationship*
- *Public sector institutional capacity requires strengthening and continuous improvement for PPP program effectiveness*

The team was particularly impressed with the EastLink project – Victoria, Australia's second fully electronic tollway. The 39-km, \$2.4 billion freeway opened to traffic in late June 2008. EastLink is Victoria's largest urban road project and PPP to date. The project opened 5 months ahead of schedule with no claims or significant issues for the state. It also has the lowest per-kilometer toll in Australia at AU\$0.11/km (2004 dollars). The project is noteworthy for its urban design features with attractive noise walls, pedestrian bridges, and public art. The photograph (left) depicts the scan team at the entrance to one of the freeway's tunnels during a field visit just prior to the project's opening. Fully electronic tolling has also produced innovation in tolling products and flexible approaches to toll collection enforcement.

Garvin plans to leverage the experience to further understanding about PPP arrangements in the United States and to maintain relationships that he developed with team members and international counterparts. In addition, he hopes to pursue research opportunities that may also result.



SUSTAINABILITY



The Sustainability Team is led by Professor Annie Pearce

The Sustainable Facilities & Infrastructure Research Team in the Myers-Lawson School of Construction at Virginia Tech, led by Professor Annie Pearce, works together on projects related to sustainability and the built environment, including both facilities and infrastructure systems.

Sustainability and the US Postal Service: An Alternative to the LEED Green Building Rating System

The USPS would like to employ a green building rating system and guidelines to support cost-effective improvements in both existing and new facilities in its portfolios to support agency sustainability goals. However, current rating systems employed by other federal agencies (primarily the LEED-NC rating system) do not match the unique needs and opportunities associated with USPS facilities, due to the nature of both its facilities and the operations that occur within them. The USPS needs a way to evaluate potential green alternatives for its facilities, both existing and new, that provides a better fit than the LEED rating system as currently implemented.

The purpose of this project is to develop an agency-specific rating system and guidelines to facilitate green projects that can be employed by the USPS as part of design, construction, and operations/maintenance of the facilities in its portfolios. The proposed approach should facilitate the achievement of agency-specific sustainability goals, be applicable to both new and existing buildings, and be tailored to the specific types of facilities and the procurement environment unique to the USPS.

Lanford Bros. Headquarters Building Expansion: LEED Documentation and Certification Support

Lanford Bros. Construction Company is in process of developing a substantial expansion of its current headquarters complex and wishes to pursue LEED Certification of the project. As part of its efforts, Lanford wishes to pursue an Innovation in Design credit based on established precedent for using the facility and project as an educational tool. Lanford seeks to partner with Virginia Tech in developing and executing a plan to achieve this credit.

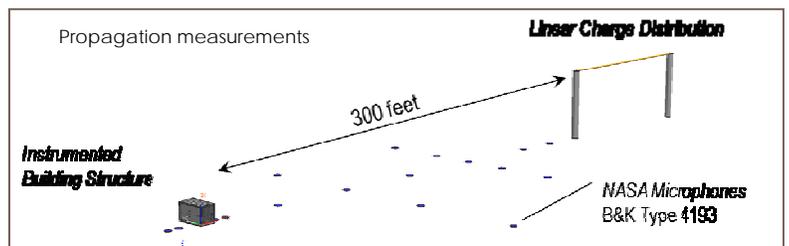
The Department of Building Construction at Virginia Tech will work with Lanford Bros. and members of the project team to develop and execute a plan for achieving an Innovation in Design credit for using the project as an educational tool. The plan will include steps to document the decision processes associated with the project and the steps undertaken during design and construction. It will also include compilation, analysis, and representation of this information in a way useful to achieve educational objectives. In parallel, the plan will investigate ways to incorporate project information as part of School of Construction courses at Virginia Tech, as well as to include green building information as part of Lanford's facilities to promote education of people who visit and work in the building.

NASA and Virginia Tech

Building Construction Professor Georg Reichard has been working in coordination with Mechanical Engineering for NASA on replicating sonic boom sound waves using Primacord technology. Their efforts resulted in the development of a model for predicting the transmission of sonic booms into buildings. The prediction model for testing reflected the impact the structure made on amplitude measured in response to the sonic boom sound waves projected from the simulator. The test building was placed 300 feet from the detonator, constructed to typical standards of wood-frame construction, and equipped with more than 100 microphones and accelerometers that were used to record the data from the simulated sonic boom. The simulator, using multiple strands of detonating cord to obtain the linear charge distribution, projected sound waves that were very comparable to those produced by supersonic airplanes.



Once the testing area was staged, the risk mitigation tests were performed. The impact that the building made was quite quantifiable—the amplitude in front of the structure peaked at 63Pa and -52Pa, while the measurements behind the building peaked at 43Pa and -38Pa.



University Centers provide the platform for substantial multi-disciplinary investigation of an area of inquiry. Centers exploit opportunities in which the complexity of the research problem or the resources needed to solve the problem require the advantages of scope, scale, duration, equipment, facilities, and students.



The Center for Innovation in Construction Safety and Health Research has been designed to address the challenge to help achieve significant levels of construction industry work-related accident, injury and fatality reduction. We are realizing this vision through collective, focused efforts to achieve four specific objectives, which are:

Major Contracts Received in 2007-08	
United Parcel Service	\$450,000
NIOSH/CDC	\$576,000
United Parcel Service (UPS)	\$41,702
Construction Industry Institute	\$189,200
NIOSH/CDC	\$388,640.
ICTAS	\$100,000

- 1) We will be an energetic, productive, accessible, collaborative, cohesive team of researchers who will develop strategic partnerships with a diverse array of construction industry stakeholders.
- 2) We will conduct exploratory, prevention/intervention and translation (research-to-practice) projects that will be innovative, integrated and multidisciplinary, characterized by a valid and unifying underlying theoretical framework.
- 3) We will actively partner with NIOSH/CDC and its intramural and extramural research programs to achieve fatality and injury reductions.
- 4) We will be benchmarked for best practices associated with our exploratory, prevention/intervention and translation projects (research to practice).

RESEARCH AFFILIATES PROGRAM

MLSoC's Research Affiliates Program provides participants the opportunity to leverage resources to support an identified area of research for a stated period of time, with each participant receiving the same benefits from membership in the program. The benefits of such membership include:

- Early Access to Research Results
- Potential to Influence Areas of Inquiry
- Priority Access to School Faculty & Students
- Priority Access to the School's Outreach Programs

Inaugural MLSOC Research Affiliates Kick Off Program

The inaugural members of the MLSoC's Research Affiliates program are Colonial-Webb, Davis Construction, Fluor and Kiewit (at the Principal Plus level); American Infrastructure and Forrester Construction (at the Corporate level). These six companies are affording the School's faculty and students the opportunity to pursue promising areas of inquiry that may lead to further research prospects. In addition, the group is assessing how best to grow the program through selected recruitment of new members.

This group met in October 2008 to discuss mutual areas of interest and subsequently issued an RFP to the faculty in December. The RFP solicited proposals in several areas such as: workforce development & safety; alternative project delivery systems; building information modeling & collaborative project delivery; industrialization of construction; and leadership in construction. The faculty submitted nine proposals in response, which are currently under evaluation.

The MLSoC Research Affiliates are integral to the School's vision to achieve excellence in research and education. The seed funds that they provide faculty to develop potential research ideas into more substantial endeavors are unique since these funds permit investigations that might not otherwise occur.

The faculty and graduate students at Vecellio Construction Engineering & Management Program (VCEMP) have been providing an ongoing support to Virginia Department of Transportation (VDOT) on matters related to the privatization of the interstate maintenance activities, innovation, and research in maintenance contracting and asset management

The most recent survey of the nation's highway infrastructure, conducted by the American Society of Civil Engineers in 2008, indicated that the U.S. road and bridge systems are in poor condition (grades of D- and C, respectively), a marked contrast from the 1988 survey by the National Council on Public Works Improvement. At that time, the nation's roads were cited to be in better than fair condition.

In Virginia, the state's Department of Transportation (VDOT) is working with a number of private companies in order to provide a timely and less costly solution to its improvement and maintenance of the Commonwealth's infrastructure needs. The passage of the 1995 Public-Private Transportation Act (PPTA) of Virginia authorized VDOT's partnerships with private firms. "A very important part of the contract between VDOT and private firms is its performance-based nature," says Dr. Jesús M. de la Garza, the Vecellio Professor of Civil and Environmental Engineering at Virginia Tech.

"A performance-based contract specifies the desired outcomes rather than the desired processes to reach those outcomes. A performance-based contract leaves the contractor free, in any sense, to choose and apply the construction methods he wishes to carry out," de la Garza adds. de la Garza, who specializes in construction engineering and highway infrastructure management and who is a member of the University's Myers-Lawson School of Construction, says the nature of the performance-based contract leads to two significant results. First, it imposes the risk of deficient design on the contractor, and second, it often makes the contractor seek innovative construction methods. "Thus, the term performance-based contracting is used interchangeably with innovative contracting," de la Garza asserts.

in its assessment of the performance-based contracts it issues. For the past eight years, de la Garza has led efforts to identify innovative ways to measure the effectiveness of the performance-based road maintenance contracts VDOT awards. The evaluation for effectiveness focuses primarily on the physical level of service of the interstate. He is now in the process of developing a unique efficiency measurement model. "Not knowing how efficient state DOTs are in being effective can lead to excessive and unrealistic maintenance budget expectations," de la Garza says.

His work is conducted through Virginia Tech's Center for Highway Asset Management Programs (CHAMPS). He believes the efficiency measurement model will be able to identify the relative efficiency of different VDOT districts in performing maintenance services, the reasons for the efficiency differences between districts, the effects of the environmental and operational factors on the road maintenance efficiency of districts, and the benchmarks and best practices that pertain to the inefficient districts.

CHAMPS is responsible for performing the baseline asset condition assessment and the annual asset evaluations to determine the extent to which maintenance contractors are achieving the performance-based targets. Anderson and Associates, Inc., a Blacksburg, Va., based engineering firm, is providing data collection services to CHAMPS. The Commonwealth of Virginia has been at the forefront of innovations in procurement and contracting strategies since the passage of the Public-Private Transportation Act in 1995. Other states are now learning of VDOT's strategic vision and trying to emulate it.

The CEE professor is assisting VDOT

SERVICE LEARNING AND OUTREACH

Belize Spring Break Service Trip

The 2008 Belize Spring Break Service Trip, where a team of volunteers traveled to Bella Vista, Belize in the spirit of collaboration to implement community-driven improvement projects, was made possible through the generous donations from Bob Wells, a VT Building Construction alum, Chairman of the MLSoC Industry Board and President of Virtexco Corporation. He and his wife Jan also gave of themselves through their participation in the construction in Belize, with shovels and hammers in hand. Bob played the role of teacher, constructor, supervisor and worker. He was invaluable to the experience for the students, contributing to their growth while instilling confidence in their abilities. Jan was an integral part of the team—working tirelessly and with infectious passion, gently guiding students to the right conclusions.

The project was a joint venture between the Peacework Development fund and the MLSoC Center for Leadership. The project involved 18 students from 8 different majors, representing 4 colleges. The team not only represented a cross-section of academic backgrounds, it was diverse in terms of gender and ethnic background. Additional participants included Josh Cohen, a 2003 Building Construction alumni who was sponsored by Kiewit Construction, professors Tony Songer and Christine Fiori and MLSoC staff member Melisa Ripeti.

The students developed designs and construction plans that detailed the materials required, quantity and cost estimates, project schedules, resource utilization plans and daily safety plans—then they put those plans into practice over a six-day period. Hygiene and sanitation were the common theme amongst the projects. These included a water-storage and distribution system, a hand washing station, secure trash receptacles and school grounds pathways. Design considerations included the use of local materials, sustainability, as well as operations and maintenance.

The trip provided a real life example of the design and construction process. The students thoroughly planned their projects but during the building process conditions changed and they had to adapt. The project provided an authentic engineering experience in the context of a developing country. It served as an opportunity to broaden the horizons of the students while helping them understand the impact of resource limitations on developing countries. The experience inspired students to inquire about the quality of life that is reality for so many people in the world and to develop an understanding of the reasons behind the inequalities they witnessed. The projects also served to integrate interdisciplinary approaches to problem solving.



The project incorporated a unique blend of academic and industry leadership. The emphasis on partnering with industry, not only financially, but having them actively engage in the process provided great benefits in terms of mentoring for the students. Jack Davis, the Dean of the College of Architecture and Urban Studies was vital to the success of the project. Sherry Cook, a Civil and Environmental Engineering undergraduate student said, “Jack was usually the “go-to” man, in the rare case that he was not already there.” Ellie Rigby, a Building Construction graduate student wrote in her journal, “That was the other aspect of the trip that was inspiring – seeing professionals like Josh, Jack, Bob and Jan take their personal time and money to help a group of students and a school.”

At the end of the trip, the group realized the impact their actions had on the Bella Vista community and the improvement of the quality of life for all who attend and work at Our Lady of Bella Vista Primary school, most apparent by the thanks from the school’s vice principal, Saira Gutierrez who, with tears of joy in her eyes stated, “Your efforts have inspired us to begin a program to plant flowers in the bed areas created by the paths.”

Overall, the trip changed lives, opened minds and brought together a diverse group of people and united their energies to make a difference. They were part of the fabric of Bella Vista, not only for those six days—the tapestry was forever altered and includes the threads of all those involved.

LEGO® PROJECT



Dr. Georg Reichard, along with three Building Construction graduate students, performed a pilot study for research for the Department of Energy during May and June. 4th grade students at Beeks Elementary School in Blacksburg, built houses with LEGO blocks which were equipped with thermo sensors. Houses were designed with two styles, one of which was a beach house with a store front. The structures were placed on classroom window sills to expose them to sunlight. The purpose of the project was to educate youth about the energy efficiency of buildings using solar techniques. Students were able to read graphs, learn about solar systems, participate in actual research and have fun at the same time.



The Myers-Lawson School of Construction is committed to an active role in the education of the community about the exciting career opportunities construction has to offer. Goals of the program include partnerships with faculty in community colleges, high school and middle schools to promote interest in construction careers through hands-on learning experiences. Additionally, the school encourages student engagement in activities that give back to the community while being good stewards of the construction profession.

THE FACULTY FELLOWS INDUSTRY EXPERIENCE PROGRAM

The Faculty Fellows Industry Experience Program will provide construction faculty the opportunity to engage in an experiential learning partnership with a sponsoring construction company. This experience will provide the Faculty Fellows with hands-on exposure to field and/or office real-life experiences, thus broadening their professional, disciplinary and personal horizon and reinvigorating their own work as teachers, scholars and educational leaders. It is expected that the investment by the sponsoring organization will be returned two-fold as current construction techniques, ethics, market trends and new initiatives such as LEED, Design Build, BIM, Lean Construction, etc. are introduced to potential future employee-owners of the company through the lectures and teachings of the Faculty Fellows upon their return to the classroom in the form of case studies and real-life lessons learned.

The Building Construction Department has worked together with the Mid-Atlantic and Capital District office of Hensel Phelps Construction Co. to develop the Hensel-Phelps (HP) Faculty Fellow in 2008. The HP fellow will sponsor 1-2 faculty for up to 8 weeks during the summer. The department is working with Dominion Mechanical and Pierce Associates, Inc. to create a new Mechanical Contractor Association (MCA) faculty fellow. The MCA fellow will accommodate faculty interested in an MEP experience and will target a shorter period (1-2 weeks). The MCA Fellow should be available beginning summer 09.

Thomas Mills was Virginia Tech's first Hensel Phelps Faculty Fellow during summer 2008. Thom was able to spend valuable time in several areas that he specifically requested, those being quality, safety, operations, production, and design manage. During his first week he was exposed to Hensel Phelps' incredibly well developed quality management system including observing the system in action of several projects including the Lorton County Jail expansion, the DC Courthouse, DISA, Downtown Baltimore Hilton Hotel and the Pentagon. He was rewarded with knowledge on how critical quality people using quality systems is in reaching success project performance.

The second phase of the Fellowship experience involved a week being immersed in safety management and training. Thom was able to see and participate in several training programs, including STOP training, and to have access to safety data for possible research projects that have the potential to lead to sponsored research. He was able to observe a professionally developed, managed, and implemented system that was consistent across all jobs that were visited. It was apparent to him that Hensel Phelps cares for its people and the subcontractor's that work for them. In the production arena, Thom spent a week at the Pentagon. He sat in on subcontractor meetings, owner/contractor meetings, scheduling meetings, walked the job with field engineers, quality, and safety staff and

was even able to walk on the roof for a short period. During this activity he was able to time and compare (to the planned) concrete placement cycles that used several motorized buggies, traveling through a labyrinth route and finally up a construction elevator to place the concrete on the second floor. He was also able to watch an excellent concrete production operation that was turning out a 10,000 SF floor every week. The production work was smooth and jumped from floor to floor without a hitch.

The Fellowship was capped with an exciting last week. First, he helped review scope for a \$150M estimate on a Public-Private venture, and also spend time on a \$400M, thirty-month design-manage facility that was just starting to break ground. During the project start-up he was able to review the design build proposal, participate with the major partners in design manage meetings, review with the design team the use of BIM as a tool for both design and documentation, sit in on cost analysis meetings linked to design solutions, attend safety training, owner/contractor meetings, and a sustainability work session. The final day he was able to sit in the bid room and observe a \$55M hard bid process during its final hours.

He says his experience was worth more than anyone can imagine and it is allowing him to bring some of his experiences into the classroom and his research. He hopes all faculty members will recognize the value and participate in the program in the future.

Catawba Farm Restoration Project



The Catawba Hospital Farm is a Virginia Tech owned facility located at the crossroads of State Route 311 and Catawba Creek Road. The farm was established in the early 20th century to provide food and milk for the Catawba Sanitarium, located one mile away. The farm was given to Virginia Tech in the mid- to late-20th century. At first, the University used it as part of the agricultural curriculum, but in recent years the farm has been all but abandoned and fallen into disrepair. The responsibility for the farm transferred to the College of Natural Resources which has partnered with a community group, Catawba Land Care, to re-purpose the facility to provide a sustainable technology showcase center as well as a facility for local farmers to store and distribute crops and livestock. The College of Natural Resources sought participation from other departments within the University, including Building Construction, to help restore and revitalize the Catawba Farm Facility.

The Building Construction student group, Constructor's Consortium, recruited student volunteers

to help with a "Catawba Farm Cleanup Day" on October 18, 2008.

The hay barn on the property needed immediate attention in the form of structural bracing and roofing - there were concerns that a high wind event would bring the barn down. The students, under the leadership of the Head of the School of Construction, Yvan Beliveau, replaced some of the structural members in the barn and began replacing the northwest side of the barn roof. Catawba Land Care manager, Ned Yost described Beliveau's directing of the Building Construction volunteers by saying, "I've always been impressed by men and women who lead by example. And there (Beliveau) was, climbing around the interior of the hay barn, power hammer in one hand, measuring, putting in the braces and new boards, all the while directing others to their separate tasks." Beliveau plans to coordinate an additional day to finish replacing the barn's structural members and to complete the installation of the northwestern section of the barn's roof.

CULTURE AND DIVERSITY

WINTER STUDY ABROAD

Seven students traveled to Portugal and Spain for a seventeen day Study Abroad program this past Winter break accompanied by faculty members Walid Thabet and Andrew McCoy. Preparatory meetings between the students and faculty identified areas of study including adaptive reuse, castle construction, construction safety, foreign business management policies, and green building and energies. The group started in southern Portugal and worked their way north with extended stays in Portugal's three largest cities: Lisbon, Braga and Porto. Day trips were made to the coastal towns of Albufeiro, Lagos, and Playa da Foz to taste Portugal's extraordinary seafood cuisine and see some of Europe's most beautiful Atlantic beaches. Countryside towns of Evora, Marvao, Tomar, Almoural and Santiago (Spain) gave the group the opportunity to visit castles, cathedrals, museums, soccer stadiums and wineries. The trip as a whole offered great perspective into Portuguese culture and heritage as well as American influence in Europe. Now that the group has returned to the United States, each student presented his/her completed study during a poster session held in February of the Spring Semester on the second floor of Bishop-Favrao Hall.



Touring Portugal



SPANISH FOR CONSTRUCTION

Myers-Lawson School of Construction Lecturer Dannette Gomez Beane and Professor Christine Fiori collaborated with InterLingo Spanish to create a Construction Spanish course for students at Virginia Tech. The Spanish for Construction course uses a dual strategy of group presentations and personal 1-on-1 sessions to maximize effectiveness. Course participants use the leading Internet video conferencing service from WebEx to connect face-to-face with their personal, native-speaking language instructor. This is the same technology used by large construction companies to connect with their constituents. Spanish for Construction teaches grammar concepts with all examples and vocabulary using building industry themes. Contact Alex Archawski at InterLingo Spanish (www.interlingospanish.com) for more information.



AMBASSADOR PROGRAM

The College of Architecture and Urban Studies (CAUS) Ambassador Program seeks to increase the diversity of the College's student population by having current students visit middle or high schools to promote a positive image of the College and to encourage those students to apply for admission to one of our 13 CAUS undergraduate programs. CAUS Ambassadors target students in their hometowns to meet during career assemblies or related classes. Building Construction graduate student Cosco Jones represented CAUS and the MLSoC at his alma mater I.C. Norcom High School in Portsmouth, VA. Cosco shared his experience with students who had been admitted to Virginia Tech but had not yet decided on a major. Cosco described his experience in the classroom, on campus, and in internships while fielding questions about the programs at Virginia Tech.

OUR ALUMNI

HOKIE HARDHATS



Alumni of Virginia Tech's Building Construction and Vecellio Construction Engineering and Management Programs, also known as Hokie Hardhats, gather throughout the year to network and socialize in Blacksburg, Northern Virginia, and Tidewater. The Young Alumni Committee and the Industry Board Alumni Subcommittee collaborate throughout the year to offer these various events.

In the spring, the groups gather to share in a March Madness social. One year the event was held at Bailey's Pub and Grill in Arlington, VA and the next year it was held at Bailey's Pub and Grill in Newport News, VA.

In the summer, the groups arrange for alumni to come out and share in a Nationals Baseball Game by reserving a box suite. This event is also open to Virginia Tech summer interns who may be working in the area to enable them to network with alumni.

In the fall, the groups organize the annual Homecoming tailgate event hosted by Ross and Aaron Myers of American Infrastructure. This event also allows current students, faculty, and alumni to reconnect and network.

By creating these social networking opportunities, the Hokie Hardhats and Young Alumni Committee strive to build the larger network of Virginia Tech alumni in construction. The goal is to grow the support and camaraderie between Virginia Tech departments, alumni, and the construction industry at large.



Above: Alumni at the spring Nationals game. Right: Alumni attending the Homecoming tailgate event

ALUMNI GROUP TRAVELS TO EGYPT

The first alumni trip abroad traveled to Egypt over the 2008-2009 winter break. From January 4th through the 17th, the group was able to enjoy the sights of the Egyptian cities of Cairo, Alexandria, Aswan, Esna, Luxor and Sharm. During their travels, they toured the Great Pyramids of Giza, the only present-day survivors of the Seven Wonders of the Ancient World, as well as the mysterious Sphinx and many ancient temples, including those of Ramses II, the complex of Amon-Ra at Karnak and the Temple of Queen Hatshpsut - Ancient Egypt's only female Pharaoh. They were also able to explore the ancient sights of the Roman Catacombs, Valley of the Kings and

Queens and the recently discovered Roman Amphitheater. Additional places of more modern cultural interest were visited as well - a tour of Islamic Cairo that included the exquisite Mohamed Ali Mosque as well as the ancient Citadel, the Khan El-Khalill Bazaar, reputed to be the largest bazaar in the Middle East and the Alexandria Library, one of the greatest and most modern libraries in the world. More opportunities for alumni group programs and events such as this trip will be presented in the future so that those bonds of fellowship, professional association and university affiliation will continue to grow ever stronger.



Visiting the Great Pyramids of Giza

ENROLLMENT INFORMATION

	Pre Founding of Myers-Lawson School of Construction		Post Founding of Myers-Lawson School of Construction			Future Projections
College of Architecture and Urban Studies	2004-05	2005-06	2006-07	2007-08	2008-09*	2010-11
(Under Grad Enrollment) BC	229	253	295	316	313	330
Number of Graduates (Per Year)	39	40	31	62	71	78
(Graduate Enrollment) MS BCSM	12	15	25	31	30	35
Number of Graduates (Per Year)	0	7	14	13	17	20
(PhD Enrollment) EDP (Const)	13	9	15	17	18	20
Number of Graduates (Per Year)	6	3	2	2	4	6
College of Engineering**	2004-05	2005-06	2006-07	2007-08	2008-09	2010-11
(Under Grad Enrollment) CEM	0	0	0	27	41	80
Number of Graduates (Per Year)	--	--	--	--	5	40
(Graduate Enrollment) MS CEE in CEM	41	39	29	23	31	35
Number of Graduates (Per Year)	2	6	6	0	0	15
(PhD Enrollment) PhD CEE in CEM	5	5	7	9	6	8
Number of Graduates (Per Year)	2	2	3	2	2	4
All Degrees Combined	2004-05	2005-06	2006-07	2007-08	2008-09	2010-11
Total Enrollment	300	321	371	423	439	508
Number of Graduates (Per Year)	49	58	56	79	99	163

*Graduates data reflects projected Spring 2009 grads
 **Many CE undergraduates pursue careers in construction, but the tally is currently not kept.



INVENTING THE FUTURE

The primary goal of the Myers-Lawson School of Construction is to provide opportunities for students who have an interest in construction. One of its first efforts to achieve this goal began the fall semester of 2006 with the development of a new comprehensive engineering degree in construction. This undergraduate degree, the Bachelor of Science of Construction Engineering and Management (CEM), is a result of the culmination of efforts of Virginia Tech's College of Architecture and Urban Studies (CAUS) and the College of Engineering (COE).

A major element of the program is a core area of classes involving both CEM students and Building Construction (BC) students. This fulfills one of the fundamental principles of the MLSoC—to facilitate collaborative opportunities for construction students at Virginia Tech.



Bishop-Favrao Hall is named after Richard Bishop, 1967 graduate of the building construction program and key alumni donor for the building, and William Favrao, founder of the university's construction program in the mid 40s.

Facilities

The Myers-Lawson School of Construction currently resides within Bishop-Favrao Hall, the home of the Department of Building Construction. The 31,600 square foot building was completed in December of 2007 and resides on Perry Street on the main campus of Virginia Tech in Blacksburg, Virginia. The Department of Building Construction and the newly established Myers-Lawson School of Construction both occupy the facility. Here, both the BC and the MLSoC house their administrative and faculty offices. Also provided is the much needed classroom space, seminar rooms and studios – all necessary due to student enrollment has doubled the past five years.

The facility helps to fulfill one of MLSoC's

guiding principles – to cultivate excellence in creative learning environments. The structural elements that are usually hidden behind walls and ceiling panels in other buildings are exposed and labeled in Bishop-Favrao Hall. This allows students to clearly see the structures they are studying in use. The building's labs dominate the first floor and will soon feature state-of-the-art equipment including fabrication machines such as a laser cutter, a virtual construction and prototyping lab, and a workshop for building assemblies.

The building echoes the department's philosophy that the student comes first. Every floor of the building is set up so the students have an open, central space—whether it is studio space, computer café

-type space, or shop space—surrounded by faculty whose offices have windows instead of solid walls that face the students on one side and show views of our beautiful mountain setting and campus on the other side.

In combination with the lead gift by Richard Bishop, additional significant contributions from alumni and industry members provided for a total of \$5.75 million in private funding for the building. The Commonwealth provided an additional \$3.55 million. Bishop, the retired founder of Columbia Builders, requested the hall include the name of William A. Favrao. Favrao founded the building construction program in 1947 and chaired it until his death in 1977.

What is to Come

The future holds many opportunities for MLSoC. Through time, these opportunities will turn into reality. As we look to the future, collaborative project delivery is becoming the norm rather than the exception. The concept of a design—bid—build world will always have its place for building projects. However, negotiating work, construction management at risk, design build, and other evolving project delivery methods provide for a far more shared working environment. The advent of build information modeling (BIM) and building performance requirements for the built environment (Green, LEED®) further drive the need for additional collaboration. We have always had the need for relations between owners, engineers, manufacturers, operators and builders but had never accomplished the interaction to the extent made possible today by the common language provided by BIM.

The MLSoC stands poised to help make this collaborative world more effective through educational, research, and outreach programs. The hope is to nurture partnerships with all the players in the built environment. MLSoC will seek to create and develop relationships within the university programs of CAUS, COE, Pamplin College of Business while looking to other programs for the future.

To further develop the MLSoC core principle of learning, another promising opportunity may be on the horizon – one

that would look at how we facilitate learning. Investigating differing learning environments, such as with integrated studios, can enhance collaboration, allowing students from differing academic programs to team in a complex project based studio requiring the skill sets of the various academic programs. Such studio opportunities are accessible in Alexandria at the Northern Virginia (NOVA) campus of Virginia Tech as well as in other areas of the main campus in Blacksburg.

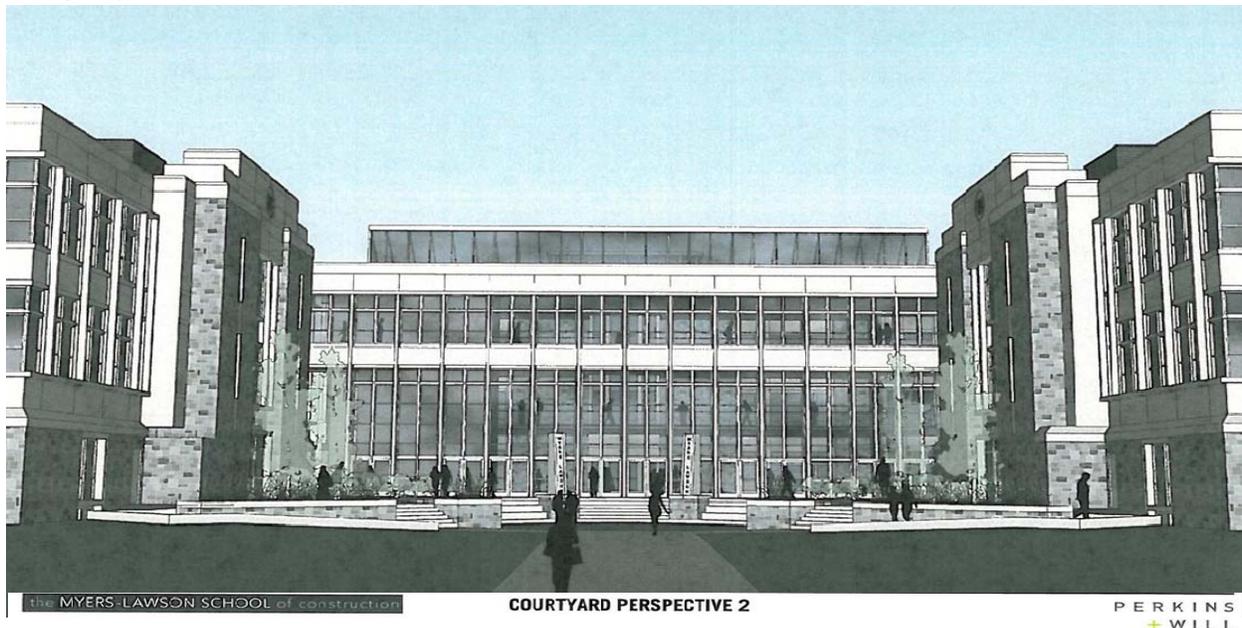
Further, it is clear there are several other opportunities in NOVA. One that appears most promising at this point in time is the area of Sustainable Construction and Development. The world of sustainability for residential, commercial and industrial projects is currently a missing element at Virginia Tech. The BC department currently has an undergraduate track in this field, which includes a real estate minor offered by the Pamplin College of Business. However, a studio based learning environment is needed to further the educational collaborations in this area. MLSoC aspires to be the catalyst for this to occur – first at the graduate level and to filter later to the undergraduate degrees.

The NOVA area also holds a great prospect for continuing education and research. MLSoC will look here for the creation of future opportunities.

To achieve these aforementioned ideals,

new educational facilities will be needed. In Blacksburg, Bishop-Favrao Hall was envisioned to provide space for up to 300 students. To date, the current number of students in MLSoC degrees stands at 450 with a prediction of more than 500 by 2011. Thus, new facilities are considered vital for our success. These new facilities should satisfy several overarching goals that include space for adaptable collaborative studios, flexible research, meeting areas, as well as space for faculty and teaching. The facility should include innovative features such as building performance technology and sustainable elements to be used as an educational tool in addition to being used for future research and analysis. The facility should also serve the fundamental needs of the university for teaching space, research space and its outreach mission. Finally, through its design and construction, the space should make a physical statement of the value of the built environment within the academic environment.

Toward this goal, an effort is underway to achieve the world class facility to match the world class aspirations of MLSoC. An early sketch of the courtyard and future facilities is shown below. The facility is expected to be built in the next few years with occupation of the current and future programs of construction, leaving room for the growth of collaborative opportunities within the university and new degree options as they materialize.



As we strategize to move to the Northern Virginia Alexandria campus location, we will work to obtain space in proximity to that campus as well. The adjacency of Architecture, Landscape Architecture and Urban Planning is critical to the long-term success and viability of an evolving construction graduate degree and a real estate development graduate degree. The future is a challenge, but more importantly it is the "opportunity". MLSoC looks to play its role in inventing the future.



Our Mission

We will provide a unified identity for excellence in construction education, research and outreach within Virginia Tech, to the academic community and to the construction industry.

Our students will come first

We will educate inquisitive values based leaders, thinkers, and integrators able to succeed in all sectors of our industry by providing an education founded on technical, managerial, and practical knowledge.

We will cross boundaries

We will provide a critical mass of faculty and students to work across traditional boundaries and share learning environments, research, and academic life without the constraints and preconceptions of traditional departments.

We will value discovery

Our learning environments and research will be based on the needs of our industry and communities, without compromise in creativity and technical quality.

We will grow a construction community

We will partner with our industry to be the benchmark provider of knowledge and leadership and make construction a career of first choice.



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This edition of the Spring 2009 Report is dedicated to the alumni, friends, and supporters who continue to contribute to the success of the Myers-Lawson School of Construction at Virginia Tech