BILLINGTON KEYNOTE LECTURE

Good afternoon, and welcome to one of this week’s highlight events as part of the 175th Anniversary Celebration of Civil Engineering at Rensselaer Polytechnic Institute. I’m David Rosowsky and it is my pleasure, both as Dean of the School of Engineering and as a Civil Engineer, to welcome you to today’s Keynote Lecture.

Today we are privileged to hear a lecture by Dr. David P. Billington, Member of the National Academy of Engineering and Gordon Y.S. Wu Professor of Engineering, Emeritus, at Princeton University. If you have heard Dr. Billington speak before, you know you are in for an extraordinary lecture. If this is your first Billington lecture, you are in for a treat. Few people are as skilled as David Billington at weaving together engineering and history, science and art, or design and its impact on our nation and our society.

Dr. Billington’s writings have been known to me since my days as a graduate student at Johns Hopkins University. Since then, I have often sought out his detailed studies and papers on history of technology, the design and construction of the great civil engineering works of our country, and how engineering – in all its forms – has shaped our history.

Today’s lecture, which has been specially commissioned by my office to commemorate this historic event at Rensselaer, is entitled “Building the United States 1835-2010: Bridges, Dams, and Civil Engineering Education.”

Dr. Billington will offer rare insight into America’s built infrastructure and its impact on our society. In today’s keynote lecture, Professor Billington offers an in-depth look into some of America’s major construction works including the Brooklyn Bridge, the Verrazano Bridge, and the much newer Zakim Bunker Hill Bridge, as well as the dams of John Eastwood and the TVA and Columbia River dams. He will also weave into his lecture his thoughts on Civil Engineering education and reflect on some of the pioneering writings in this field.

It is my great honor and personal privilege to introduce our Keynote Speaker today. Please join me in welcoming Professor David Billington.

PRESIDENTIAL COLLOQUIUM

Good morning, and welcome to the 175th Anniversary of Civil Engineering Colloquium, a Presidential Colloquium held as part of this historic week of celebrations. It is fitting that we hold this event in one of our newest and most spectacular academic platforms on the Rensselaer campus, the main concert hall in the Experimental Media and Performing Arts Center or EMPAC. I’m David Rosowsky and I have the great honor of serving as the Dean of the School of Engineering at Rensselaer. As a Civil Engineer, I am especially proud to be serving as we celebrate the 175th Anniversary of the awarding of the first Civil Engineering degree in the United States.
Since 1835, Rensselaer Polytechnic Institute has trained literally legions of civil engineers, many of whom have had a profound impact on our built environment, on our country’s expansion westward, the development of our major urban infrastructure. Similarly our Civil Engineering graduates have influenced the built environment and quality of life worldwide and continue today to serve as engineering project managers and corporate leaders with projects literally around the world. As I said in a op-ed piece I recently prepared leading up to his Anniversary Event – “for a relatively small university, we have had a mighty impact on the profession of Civil Engineering.”

Today, we are privileged to hear from two giants in engineering and education. In our colloquy entitled “The Civil Engineering Revival: Challenges, Grand Challenges, and Champions,” we are invited to listen in on a conversation between two members of the National Academy of Engineering, each of whom has led a premier technological research university. In addition, both Colloquy speakers are recognized scholars in their fields, are major voices in the national discourse on engineering education, and have – through their leadership – been able to influence national policy in science, technology, and education.

I extend my personal welcome to all of you this morning and thank you for joining us at this very special event, our 175th Anniversary of Civil Engineering Colloquy. This morning’s Colloquy will be followed by a very special presentation by the National President-Elect of the American Society of Civil Engineers. But first, it is my pleasure and my honor to introduce the 18th President of Rensselaer Polytechnic Institute, the Honorable Dr. Shirley Ann Jackson.

**10th ANNIVERSARY OF THE O.T. SWANSON MULTIDISCIPLINARY DESIGN LAB**

Welcome, and welcome back, to Rensselaer and to the 10th Anniversary of the O.T. Swanson Multidisciplinary Design Lab. Cynthia, Bob – it’s a pleasure to see you again and we are so glad to welcome you back to campus for this Anniversary Event.

Mark – I want to thank you and your team in the MDL for everything you have done, and are doing, for our students. To Mark Steiner, Barry Stein, Mark Anderson, Casey Goodwin, Richard Alben, Scott Miller, Junichi Kanai, Aren Paster, Valerie Masterson – THANK YOU for the tremendous job you are doing.

The Design Lab (or MDL) is a point-of-pride for us in the School of Engineering. Today we are celebrating ten years of success, of a vision realized, a model envied by other universities, and both an environment and educational experience that further distinguishes our engineering graduates from those at other fine universities.

But we also gather today to look, hopefully, to the future. A future that includes design experiences that carve even deeper into our undergraduate degree programs, that becomes inclusive of our graduate students, and that reaches even further across the Institute to develop truly interdisciplinary design experiences for our students.

The Multidisciplinary Design Lab of the future – our future – will be bigger, bolder, and broader, to tackle the Grand Challenges and prepare the leaders of tomorrow, to ensure that Rensselaer remains as an innovator and leader in design-based education, and that we can adopt (and expand) not only to the technological challenges that lie ahead, but to the demands of our increasingly talented and passionate students. They really do want to change the world. And the O.T. Swanson Multidisciplinary Design Lab can continue to enable their success and prepare them to have that world-changing impact.

It is now my pleasure and my honor to introduce the 18th President of Rensselaer Polytechnic Institute, the Honorable Dr. Shirley Ann Jackson.
Good evening and welcome to the Heffner Alumni House and our Gala Dinner celebrating Civil Engineering at Rensselaer. I’m David Rosowsky, the Dean of the School of Engineering – and indeed a very proud Civil Engineer. For those who may not know me, I joined Rensselaer in Summer 2009 as Dean of Engineering, and prior to that I served as the Head of the Department of Civil Engineering at Texas A&M University. I have often reflected on the great privileges I have had in my career, which spans 20 years in civil engineering education and research – to serve as the Head of the LARGEST Civil Engineering department in the county, and as the Dean of the school having the OLDEST Civil Engineering department in the country. Tonight, and indeed all week, we are celebrating an historic occasion at the Institute—the 175th anniversary of the awarding of the first Civil Engineering degree in the United States. It was in 1835 that Rensselaer Polytechnic Institute awarded that degree, about a decade after West Point offered the first course titled “civil engineering.”

The field of Civil Engineering in the U.S. could be deemed to have started some time earlier when the Congress authorized an “Engineer Corps” in 1776. But it was in the 1820s that we find first reference to a developing distinction between “civilian” and “military” engineering, when civil (non-military) engineers were directed by Congress to survey selected roads and canals. As military engineering “split” into mechanical engineering and electrical engineering some years later, so too has the field of civil engineering grown, bifurcated, and given rise to entirely new fields of modern engineering.

The history of Civil Engineering at Rensselaer is simply extraordinary. A brilliant past, on which was founded a truly great engineering school, and which has given rise to a major national research platform for preparing the next generations of engineers and scientists and for creating the next technological breakthroughs. We can count iconic civil engineers and pioneers such as Emily and Washington Roebling, George Ferris, Ralph Peck, and Admiral Lewis Combs, co-founder of the U.S. Navy Seabees, among our many outstanding civil engineering graduates. For such a small university, we have had a mighty impact on the profession of civil engineering and on the infrastructure that made this country great.

Today, our faculty and students are taking on the new challenges—the grand challenges—that will enable our society, our economy, and our security to continue to flourish. Today’s Civil Engineering faculty and students at Rensselaer are bringing their talents to bear on problems of water, energy, air pollution, decaying infrastructure, economical and safe transportation, design for natural hazards, and the next generation of sustainable building materials. Our graduates are leading corporations, creating new technologies, managing complex systems, starting their own companies, and leading teams of problem-solvers worldwide. We see our Civil Engineering alumni at the forefront of efforts to develop clean water, create sustainable infrastructure, manage increasingly complex and interconnected transportation systems, and develop green technologies for the built environment. Indeed we should be tremendously proud of Rensselaer’s Civil Engineering heritage and the success of our many Civil Engineering graduates over the last 175 years.

I want to thank all of you for attending this evening’s dinner and helping us to celebrate our 175th anniversary. I extend a special welcome to our Civil Engineering Alumni who understand, more than anyone, the value of the Rensselaer Civil Engineering degree. Tonight we celebrate you, your classmates, and your colleagues – just as we celebrate our current faculty and students.

Before we enjoy the dinner, I would like to recognize a few of our guests this evening. First, I would like to recognize Professor James Mitchell, Class of ’51, and his wife Holly. Dr. Mitchell, Member of the
National Academy of Engineering and University Distinguished Professor Emeritus at Virginia Tech, was awarded the Davies Medal at a special ceremony this afternoon. As you may know, the Davies Medal is the highest award bestowed by the School of Engineering on one of its graduates. Jim and Holly, welcome.

Next I would like to recognize Professor David Billington and his wife Phylis. Professor Billington, Member of the National Academy of Engineering and Gordon Y.S. Wu Professor of Engineering, Emeritus, at Princeton University, will deliver the 175th Anniversary Celebration Keynote Lecture tomorrow afternoon at 2PM in EMPAC, entitled “Building the United States 1835-2010: Bridges, Dams, and Civil Engineering Education.” David and Phylis, we are so glad you could join us this evening. Welcome.

I would also like to recognize Ms. Kathy Caldwell, National President-Elect of the American Society of Civil Engineers, the largest and oldest professional engineering society in the United States. Kathy has joined us for the Anniversary Celebration and will be making a special presentation at tomorrow morning’s 175th Anniversary of Civil Engineering Colloquy in EMPAC. Kathy, thank you for being here. Welcome to Rensselaer.

Finally, I want to recognize Dr. Tarek Abdoun, Acting Head of the Department of Civil and Environmental Engineering, and his wife Nevin; and Dr. Chris Letchford, Incoming Head of the Department of Civil and Environmental Engineering, and his wife Lois. I am personally grateful to Tarek for his capable and effective leadership of the Department this past year as we completed the search for a new Department Head. And Chris, I can only imagine how excited you must feel at joining Rensselaer to lead this great department at this time. We look forward to welcoming you and Lois officially in January as you assume your new position and lead our Civil and Environmental Engineering department forward. Thank you, in advance, for your leadership, your energy, and your vision for how we can continue to educate civil and environmental engineers who will change the world. I stand ready to assist you and look forward to working with you. Please join me in thanking Professor Tarek Abdoun and welcoming Professor Chris Letchford.

At this time, it is my pleasure and my honor to introduce the 18th President of Rensselaer Polytechnic Institute, the Honorable Dr. Shirley Ann Jackson.