

Marriott Marquis Hotel, Washington, DC – Design and Top Down Construction

By Chris Crilly, P.E., LEED AP, Thornton Tomasetti

Plans for the recently opened Marriott Marquis Hotel in Washington, DC called for the development of a 1.25 million square foot building on a 100,000 square foot site. With 1,175 rooms and 49 suites, it is the largest hotel in the city. The Washington, DC Marriott Marquis illustrates important principles for excavation, analysis, detailing, and construction.

- Why was top down construction used when the building is only 15 stories tall and seven stories deep?
- How did top down construction work?
- How did it affect foundation and framing design?
- How were soil pressures directed around huge openings in basement slabs?
- And how were transfer girder deflections handled to keep upper floors level?

Join us Tuesday, November 18 to learn the answers to these questions and more!



Marriott Marquis Hotel, Washington, DC

Mr. Chris Crilly is an Associate of Thornton Tomasetti and has nine years of experience designing structures for a variety of building types, including healthcare, office, educational, hospitality and residential. He is responsible for structural analysis and design, oversight of engineering and Building Information Modeling (BIM) staff efforts, coordination with architects and design team members, production of structural drawings, and construction administration. Other notable projects include CityCenter DC,

Walk, ride, or drive to our dinner meeting on **Tuesday, November 18**, at the Hilton Arlington, 950 North Stafford Street, Arlington, VA, on the second floor in the Gallery Ballrooms. Parking is available at the hotel (\$8), at the Ballston Mall garage (\$1 after 6 p.m.), and on the street (free after 6 p.m.). The Hilton is on the same block as the Ballston Station on Metro's Orange and Silver lines. Registration and networking will be from 6-6:45 p.m., followed by dinner. The program will end by 8:30 p.m. The cost is \$45 for those preregistering, \$10 for students, and \$55 for walk-ins, as space allows.

Please register by November 12. Click [HERE](#) to register. One Professional Development Hour is available to attendees. For questions, please contact [Christian Manalo](#).

Note that no-shows will be charged the full registration fee. We welcome walk-ins, including any registrations made after the guaranteed number of guests is provided to the hotel. However, the cost for walk-ins is higher because the Section is charged accordingly by the hotel for late registrations.



Top-down Excavation Mining in Action

Norfolk Courts Consolidated Courts Complex, Bloomberg Children's Center and Sheikh Zayed Tower, and Torre Koi, a mixed use high rise currently under construction which upon completion will become the tallest building in Mexico at 276 meters tall. Mr. Crilly was founder and past chair of the Structural Engineers Association of Metropolitan Washington's Young Members Group. ■

President's Corner

In last month's section meeting, ASCE President Bob Stevens discussed the origins of ASCE and how today's civil engineer must heed a call to action in order to build and maintain our infrastructure and continue to serve our society. ASCE's 2013



[Report Card for America's Infrastructure](#) highlights the need for increased investment in our infrastructure. An economic study released that same year illustrated how an investment of \$157 billion per year will protect \$3.1 trillion in GDP, \$1.1 trillion in trade value, 3.5 million jobs, and \$2.4 trillion in consumer spending.

This tremendous payback is as much apparent here in Washington, DC than anywhere in the country. According to a 2014 report sponsored by the U.S. Department of Transportation, commuters in the DC area suffer the longest traffic delays than any other major U.S. city. Despite recent major improvements including the Wilson Bridge, Inter-County Connector, I-495 HOT Lanes, and Silver Line, we still lose immeasurable hours each year simply getting to and from work and home. DC-area drivers spend more than twice the national average time sitting in bumper-to-bumper traffic. It is estimated that our region experiences nearly 200 million hours

of travel delay per year. Imagine if we could cut our average 39.5-minute one-way commute to 20 minutes and how much more productive and content we would be. What would you do with an extra 40 minutes per day, 200 minutes per week, and 160 hours per year?

In my first month as president, I've had the fortunate experience of participating in several of our Section's many activities. I participated in meetings organized by our Young Members Forum, Sustainability Committee, Water Resources Committee, and Centennial Committee. I met with Board members and helped forge new partnerships, including with the American Association of Cost Engineers and Potomac Piranhas. I also observed our members plowing ahead with the centennial commemorative book and the DC infrastructure report card. It is reassuring to see so many volunteers support fellow civil engineers, including continuing the call for much needed infrastructure investment.

Despite the tireless efforts of our members, there is a realization that much more is needed. As practicing engineers, we cannot afford to expect that our infrastructure will be funded

appropriately; in fact, it is much more likely that funding will not meet levels that are needed. The end result of this continuous shortfall translates to worsening conditions for our roads, bridges, water systems, rail lines, buildings, parks, and other infrastructure. This negatively affects all our citizenry, not to mention our fellow civil engineers whose job it is to overcome these challenges.

With this realization, I repeat the call for action expressed in last month's meeting and I ask for your support. To the extent that you are able, we welcome any contributions that you can make. If you are a government employee, ask your employer to be a supporting agency. If you are in private industry, be a sponsor. Host or help organize an activity, share your experiences, and encourage your colleagues to participate as well. I can assure you that what you do to support your peers will be rewarding both personally and professionally.

ASCE can and will bring greater attention to our area's infrastructure needs as we promote the need for increased investment. In so doing, we will highlight the contributions of our profession and help secure our future.

Christian Manalo
President, ASCE-NCS 2014-15

DISCOVER ENGINEERS WEEK

FEBRUARY 22-28, 2015

Newsletter

Rachel Schneider, Editor

January 2015 Issue Deadline: December 15, 2014

To Submit Articles: newsletter@asce-ncs.org

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Please refer to the [NCS website](#) for a current list of NCS committees and chairs.

2015 ASCE-NCS Awards Banquet

Nominate Today!

The Annual Awards Banquet provides an opportunity to recognize and celebrate local projects, engineers, and students who have contributed to our section and our community. Every year, the NCS honors during its annual banquet award winners in the following categories: *Outstanding Civil Engineering Project team, Community Service, Meritorious Service, Student Scholarships, and ASCE-NCS Life Member Status.*



Awards are granted by the Awards and Nominations Committee and are presented at the Section's Annual Awards Banquet held in March 2015. A description of each award, the respective requirements, and additional information were presented in the [October newsletter](#).

Please submit all nominations to [Ranjit Sahai](mailto:Ranjit.Sahai@ram-corp.com) no later than **December 31, 2014**.

Ranjit Sahai, P.E., F. ASCE
Chair, Awards and Nomination Committee
RAM Consulting Corporation
21525 Ridgetop Circle, Suite 270
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All members are encouraged to nominate, either by e-mail or traditional mail for **members and/or projects for one of these awards**.

2015 ASCE-NCS Sustainability Award

Nomination Deadline is Fast Approaching

The tenth annual ASCE-NCS Sustainability Award recognizes private-industry outreach initiatives and projects or public legislation/programs in the metropolitan Washington, DC area. The award-winning project will advance or promote the responsible and sustainable development of infrastructure, the built environment, or the conservation of natural resources.

The award criteria and other requirements were presented in the [October NCS eNewsletter](#). The nominating individual must provide his/her name,

affiliation, telephone number, and e-mail address by **December 31, 2014**. For more information or to submit a nomination, contact the Chair of the ASCE-NCS Sustainability Committee, [Alex Rosenheim](#), P.E., LEED AP, M. ASCE. The winner will be announced at the NCS Awards Banquet in March 2015.

Anyone interested in becoming involved with the Sustainability Committee please contact Mr. Rosenheim. ■



ASCE-NCS Past President Delon Hampton Named a 2014 Distinguished Alumnus of Engineering Honor Society

Delon Hampton, Ph.D., P.E., Dist.M.ASCE, ASCE Past President, NCS Past President, and founder and president of Delon Hampton and Associates in Washington, DC, was named a 2014 Distinguished Alumnus of Tau Beta Pi, the International Engineering Honor



Society. He is the twentieth person to be honored in the 129-year history of the Association. The Distinguished Alumnus award recognizes Tau Beta Pi Alumni "who have demonstrated adherence to the ideals of Tau Beta Pi and foster a spirit of liberal culture in our society on the local, national, and international scales, with achievements that exemplify the diverse contributions that engineers make to society, and demonstrate breathe of interest, unselfish activity, and true spirit of integrity and excellence in engineering." Dr. Hampton was nominated by the DC Alpha Chapter at Howard University where he is Emeritus Professor of Civil Engineering and was inducted as an eminent engineer member of Tau Beta Pi in 1996. **Congratulations Dr. Hampton!** ■

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NCS Committee News and Updates

New! Did you know that the NCS chapter has fifteen [technical committees](#) that members can join? Every issue we will highlight a technical committee to help you learn more about each one. All of the committees can be found on our website under the Technical Committees tab.

Sustainability: A Combination of Broad and Detailed Topics for a Full Toolbox of Solutions

Sustainability, like ethics and safety, is inherent in all of our efforts in civil engineering. The key elements of sustainability incorporate projecting the entire life cycle of our improvements. Proper planning from conception by selecting not just the right way to do a project, but also of consideration of the right project to do is critical in maximizing our effectiveness in responding to our society's needs in the coming years.

The [ASCE-NCS Sustainability Committee](#)

has focused its efforts on exploring general topics of sustainability and support of ASCE's triple bottom line of design: Economic, Environmental, and Communal. For sustainable design, all three elements on the full life-cycle of societal improvement must be considered. The Committee will continue to educate ourselves and the Section with these important broad topics of sustainability, but would also like to dig deeper into more detailed technical topic in all of the disciplines within Civil

Engineering to ensure that the current and future Engineers in the ASCE have a broad toolbox of solutions to address and respond to the ever changing world in which we live.

In addition to general infrastructure planning, we will expand our educational and professional development program to integrate with the detailed topics within all of our technical sub-committees, be it Water Resources, Geotechnical, Transportation, Structural or any of the other specific disciplines within Civil Engineering.

We are seeking solutions that can be resilient in the face of increasingly harsh environmental conditions and increasingly vast population needs, and will

help to halt the changes in the environmental conditions or alter the needs of the population by seeking out innovative solutions and understanding cultural changes in how we live and what we value most.

We have very exciting programs planned that we hope to bring to the entire Section, from the life-long members,

the local university students, and the younger members of our community. Look for these topics within your discipline sub-committees in the coming months.

For more information about the Sustainability Committee or to topic ideas, contact tcc-sus@asce-ncs.org.



Bridging the Gap Between Climate Science and Civil Engineering Presentation Recap

On Wednesday, October 8, 2014, the ASCE-NCS Sustainability Committee hosted a technical presentation on Bridging the Gap Between Climate Science and Civil Engineering as part two of our series on Civil Engineering Implications of Climate Change on Infrastructure. The full presentation, and the previous presentation by Dr. Donald Boesch, is available on the [ASCE NCS website](#).

Mr. Richard N. Wright, a valued ASCE National Capital Section member and Vice Chair of the ASCE Committee on Adaptation to a Changing Climate, presented his ASCE Committee Report on Adaptation to a Changing Climate. The presentation discussed ways that engineers can contribute to bridging the gap between climate change science and engineering practice. Mr. Wright reviewed the observations and conclusions of climate scientists as it relates to predicting best and worst case speculation of the environmental impacts of the natural world on built infrastructure. He discussed anthropogenic factors on future emissions and representative concentrations pathways of radiative forcing due to increasing carbon dioxide levels.

Mr. Wright discussed the United Nations Intergovernmental Panel on Climate Change (IPCC) projected temperature extremes, wind extremes, wind and rainfall extremes during cyclones, extreme droughts, increased wildfires, increased impact due to flooding, sea

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level rise and coastal incursions and degrading phenomenon in cold and high mountain regions such as slope instabilities, mass glacial movements and glacial lake outburst floods. The full IPCC report can be found at <http://ipcc-wg2.gov/SREX/>.

The climate is changing, the Committee noted, and there is substantial uncertainty regarding the magnitude of the change over the design life of the systems and elements of our built environment. Reliably estimating the change that will occur over several decades, long after the infrastructure is built and the financing and governance have been established will be difficult. Therefore, engineering designs, plans,

and institutions and regulations need to be adaptable for future conditions (conditions of climate, weather and extreme events, as well as normal infrastructure demands).

The ASCE Committee on Adaptation to a Changing Climate recommends:

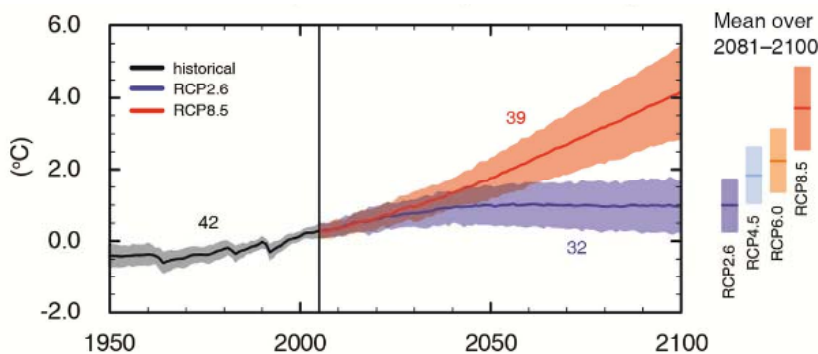
- Engineers should engage in cooperative research, involving climate, weather, life, and social scientists, to gain an adequate, probabilistic understanding of the magnitudes and consequences of future extremes.
- Practicing engineers, project stakeholders, policy makers, and decision makers should be informed about

the uncertainties in projecting future climate/weather/extremes.

- Engineers should use low-regret, adaptive strategies, such as the Observational Method to make projects resilient to future climate and weather extremes.
- Critical infrastructure that is most threatened by changing climate should be identified and decision makers and the public be informed of these assessments.

The event took place at Rock Bottom Brewery in Arlington, VA and concluded with a rousing discussion among event attendees and Mr. Wright.

Global Average Temperature Change: Historical and Projected



Source: Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis Summary for Policymakers, http://www.climatechange2013.org/images/uploads/WGIAR5-SPM_Approved27Sep2013.pdf accessed 11/10/13.



Younger Members Forum

Monthly Happy Hours. The ASCE-NCS Younger Members Forum (YMF) holds monthly happy hours in Arlington, VA or Washington, D.C. Happy hours are typically held the first Wednesday of each month unless a holiday falls during that week. The ASCE-NCS YMF held their October Happy Hour at *Continental Pool Lounge* in Arlington, VA on October 8 where 20 members attended the event.

The next monthly happy hour will take place in Downtown Washington, DC (location to be announced) at 6pm on Wednesday, November 5. Look for emails with specific locations for future monthly happy hours!

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Toys for Tots Happy Hour Event – December YMF Happy Hour. Join the NCS on December 3 for the annual ASCE-NCS Toys for Tots event, to be held in conjunction with the YMF Happy Hour at the Front Page Restaurant in Arlington, Virginia. The NCS will be collecting new and unwrapped toys at the event to distribute as Christmas gifts to less fortunate children in the Washington, DC area. Past years have been well-attended, with many of the toys being engineering or construction themed. Come join us for food and fun as we help to spread hope and joy to less fortunate youngsters this holiday season through our contributions!

YMF Professional Development Meeting Recap. The ASCE-NCS Younger Members sponsored a Professional Development event on October 1st at Ragtime in Arlington, VA. Author and historian Garret Peck presented on the Seneca Quarry; its



history and how it influenced decades of Washington D.C. architecture to a 30-person crowd. Garret's lecture described the now abandoned quarry, which is located just north of the city, and its distinctive red sandstone which is visible in numerous DC buildings. Attendees learned about the quarry's unique history and got insight into the quarry's daily operations as a once thriving industrial site and how it ties into the history behind many DC sites and buildings including, the C&O Canal and the Smithsonian Castle.

For more information about the upcoming Seneca Quarry tour by Mr. Peck this fall/winter, the ASCE-NCS Younger Member Professional Development Meetings or if you would like to suggest a presentation topic, contact ncsymf-president@gmail.com.

Get Involved! Are you interested in getting involved with more Younger Members activities? Do you have ideas for social events or volunteering activities? Would you like to be a board member? The ASCE NCS Younger Members Group is always looking for new members! Let us know if you are not already on our mailing list! If you would like to become more active with the YMF or would like more information on our events, please contact the [YMF President](#).

Stay Connected! Check out photos and stay up-to-date with YMF events by visiting the new YMF Facebook page at www.facebook.com/ASCENationalCapitalYMF. You can also follow us on Twitter (@asce_ncsYMF) at https://twitter.com/asce_ncsYMF.

Water Resources Committee Interview with Bill Levy, DC Water Program Manager. Bill Levy is one of the tunnel design program managers for the DC Water DC Clean Rivers Project with more than 34 years of experience in geotechnical and civil engineering. Prior to DC Water, Mr. Levy was the Geotechnical Program Manager for the Massachusetts Water Resource Authority where, for 20 years, he managed their very successful combined sewer overflows (CSO) program and many major capital improvement projects.



Secant pile drilling at First and V Street NW

Project Overview

The First Street Tunnel is part of DC Water's DC Clean Rivers Project and is designed to control CSOs to the Anacostia River and mitigate flooding in the Northeast Boundary area of Washington, DC, including the Bloomingdale and LeDroit Park neighborhoods. The tunnel will run under First Street, NW, from Rhode Island Avenue and First Street, to the southwest corner of the McMillan Sand Filtration site. It will be 2,700 linear feet long, 20-foot diameter, and 70-100

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feet below ground. Upon completion in 2016, the tunnel will hold stormwater during intense rainstorms and a temporary pumping station will deliver the stormwater into the sewer system to be treated at DC Water's Blue Plains Advanced Wastewater Treatment Plant.

Why is the First Street Tunnel important?

Flooding in the neighborhood has been a chronic problem since the late 1800s, shortly after the Bloomingdale and LeDroit Park Neighborhoods were established. Development north of the old city limits and the low-lying topography of the area has contributed in overburdening the existing combined sewer system. This project will help to mitigate the flooding in these neighborhoods.

Why now?

The storm events of July and September of 2012 caused significant flooding in the neighborhoods; that posed a threat to public health and safety and damaged more than 250 homes. The Mayor assembled a task force to mitigate the problem. The First Street Tunnel was accelerated in the Clean Rivers project schedule as a medium term solution to provide relief to neighborhoods by March 2016.

What has been the most challenging aspect of this project?

Maintaining the quality of life in a residential neighborhood while conducting major construction. Early in my career, I was reminded that "there is no public works without the public." The community, DC Water, and other participating agencies have been working together to find reasonable solutions to the challenges that come with a project of this

size and duration. DC Water chose to administer this project using a Design-Build delivery method which allowed DC Water to work collaboratively with potential contractors and encourage innovative solutions that provided the best mitigation to the community such as ground freezing as excavation support instead of more traditional methods.

What is the anticipated cost?

The project is estimated to cost \$158M dollars.

If you had to choose one fact about the project to spark the public's interest, what would it be?

We are constructing a 20 foot diameter tunnel under First Street NW DC and will use the first ground freezing in DC since



Slurry wall installation south of McMillan Reservoir

the WMATA [Washington Metropolitan Area Transit Authority] construction in the 1980s. Flooding in this neighborhood has been a chronic problem which has been difficult to mitigate. DC Water is to be commended for taking this on and bringing an innovative solution to the problem in a manner that is sensitive to the community being served.

ASCE members interested in becoming involved with the Water Resources Technical Committee should contact [Piers Causton](#), [Sudhanshu Mishra](#), or [Sara DeGroot](#). Visit the [committee website](#) for additional information.

Transportation Committee News Structural Health Monitoring for Bridges (TRB Webinar)

By Ranjit S. Sahai, PE, F.ASCE

On October 22, 2014 the Transportation Research Board (TRB) hosted "Practical Structural Health Monitoring [SHM] for Bridge Owners," a live webinar presented by Marybeth Micelli, Steven Lovejoy, and Nicolas Betancur. John Duke of the Federal Highway Administration moderated the session. The webinar's objectives were:

- To identify the role of structural health monitoring (SHM), its categories, determining factors, and usage scenarios.
- Show how Ohio Department of Transportation (DOT) is using SHM for ten bridges. With a detailed discussion about the Fremont Bridge from SHM initiation to rehabilitation to extend its serviceable life.

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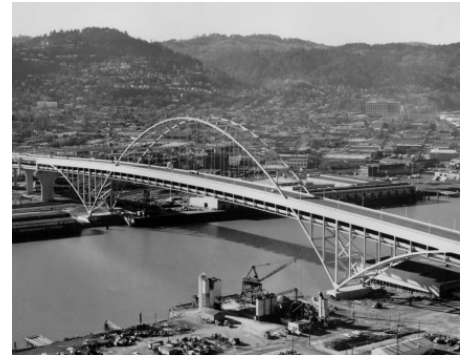
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- Demonstrate a case study of a MassDOT bridge where the use of SHM cut rehabilitation costs by 50%.

SHM uses sensors to gather real-time data and statistical analysis tools. When problems are first noted visually, conventional and cheaper tools, including nondestructive testing may identify the root cause of the problem. But if it does

not, progressive levels of monitoring are required. Ohio DOT is using SHM on ten bridges to monitor structural, mechanical, and foundation problems.

To learn more about SHM, TRB's webinar is a great source to discover what it is, how it is being used, and why it is a valuable tool in the bridge structural engineer's toolbox. ■



October Meeting Recap – Creating a Walk Friendly Community in Arlington

By Ranjit S. Sahai, PE, F.ASCE

For those of you who do not spend your days making future plans for our streets, which I suspect is most you, our October Section Meeting guest, Ritch Viola, Supervisor of Arlington County's Planning Section delivered insights that are sure to surprise and inspire you. Let me share with you some of these insights.

Boston was founded in 1630, Arlington in 1801. The 170-year difference between their founding continues to impact how these communities address the needs of those who walk to work or play to this day. Why? One of the first cars accessible to the masses was built by Ford in 1908. When infrastructure

started in Boston, walking was a meaningful way to commute but when Arlington's infrastructure started, cars were the mode of transportation. For Arlington to be recognized as a Gold Level walk friendly community by walk-friendly.org, the County had to contend with the infrastructure it had inherited more than one hundred years ago.

Consider the left photograph of the sidewalk. The light poles, trees, and storefronts were already in place when wide sidewalks were installed to accommodate heavier foot traffic; now they impede pedestrian traffic that must swing around the obstructions. When wide sidewalks are constructed around

storefronts and integrated from the get go with a walk-friendly master plan, the light poles and trees are still installed, but away from foot traffic. Such details are planned.

As the major urban centers across our nation are growing in density, our reliance on modes of transportation other than cars is also growing. Rather than viewing cars as the primary customer of streets, the Complete Street initiative promotes the view that pedestrians, bicycles, buses, and transit should be treated as street customers on an equal footing with cars.

One approach to planning the future of streets is to rely on vehicle-mile-travelled projections that have not been reliable since the start of the twenty-first century. Another approach is to deliberately plot our future instead of looking to continue on a path predicted by extrapolation of the past. In other words, should our infrastructure be built on the idea that the future will continue to look like today but with a greater population density, or should we imagine and plan a future that addresses our transportation challenges in new and different ways that make the challenges irrelevant?

It was an absolute pleasure listening to Ritch and learning from his hard-won experience in helping make Arlington walk-friendly. ■



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NOT THE DETAILS.
THEY MAKE THE DESIGN.

CHARLES EAMES

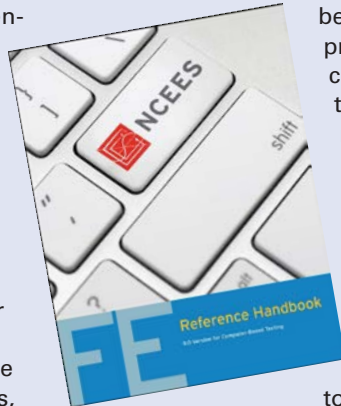


A tale of two sidewalks.

Conquering the FE & PE Exams – “PAT” Stands for Parallel-Axis Theorem

I was an avid reader of science fiction, and back in early eighties I read “X” *Stands for Unknown*, by Isaac Asimov, a collection of seven-teen nonfiction science essays published in a science fiction magazine. The subtitle of this month’s article was inspired by that book and following some of our readers’ requests, I’ve decided to write about the Centroids, Moments of Inertia, and “Parallel Axis Theorem for an Area” which is one of the most important theorems in mechanics.

In the *FE* and *PE* exams there will be several questions about finding the centroids and moments of inertia of simple or composite areas. Both topics are listed as the “suggested required topics” at the top of page 266 of the new NCEES-Reference Manual (CBT-Version 9.1). Without getting into complex mathematics or derivations, let’s start with the “centroid of a cross-sectional area.”



In simplest terms, the centroid is a point that defines the geometrical center of an object or area and has to be determined first when solving problems in bending of beams, columns, and finding the deflections of flexural members, to name a few. The centroid of an area can be defined by considering the first moment of area about an axis, *Integral* (x.dA) and here x is known as the moment arm. On the other hand, the second moment of inertia, which is *Integral* (x²).dx is referred to as the moment of inertia for an area. Many problems in the *FE* and *PE* exams will require you to find the moments of inertia of any given area about any given axis, mostly horizontal centroidal axis.

In the NCEES-Reference Handbook, “Centroids” and “Moment of Inertia” are introduced on page 36, and on page 64, Moment of Inertia and “PAT” is defined. “The moment of inertia of an area about any axis is defined as the moment of inertia of the area about a parallel centroidal axis plus an additional term equal to the area multiplied by the square of

the perpendicular distance d from the centroidal axis to the axis in question.” Two PAT formulas are in the handbook after the definition.

Visit the [problems/examples](#) for examples and supplemental problems to help demystify these concepts. Also, I strongly remind readers to review the formulas on page 65 of the Reference Handbook *before* taking the exam. When you need a formula for an area, centroid, moment of inertia, radius of gyration and product of inertia for simple shapes, **go directly to PAGE 65** of the Handbook without wasting time. Rectangles, triangles, circles, circular sectors are on pages 65-67.

As always, I shall close with a final thought: during the *FE* or *PE* exams, the more time you spend on a difficult question, the more time you risk second guessing yourself. Trust your intuition. You have worked hard, don’t doubt yourself! Come back to that question later when you might have a clearer mind.

Until next time,
Dr. Z.



Volunteers Needed for Discover Engineering Family Day at the National Building Museum – February 28, 2015

We need volunteers for our activity at the National Building Museum’s (NBM) Discover Engineering Family Day on Saturday, February 28, 2015. Discover Engineering Family Day is an annual event designed to introduce children to the wonder of engineering and the importance of technological literacy. Thousands of children of all ages and their families enjoy Discover Engineering Family Day.

Volunteers are needed for two shifts; the morning shift and the afternoon

shift. If you can’t commit to an entire shift, volunteers are welcome to come in at any time and stay for as long as they like. Volunteers will hand out materials and help guide children in the construction of sky scrapers made of spaghetti and mini marshmallows. The structures will be tested with a dead load until failure (the best part for the kids!). The NCS will provide all materials.

The NBM is located 401 F Street NW, in Washington, DC, and is most accessible from the Judiciary Square Metro Station

on the Red Line. Parking is NOT available at the museum. There are several parking garages in the area as well as metered street parking.

More information about the event will be in the January newsletter and can be found on the [Discover Engineering Family Day](#) website. To learn more about volunteering for Family Day, contact [Dean Westman](#). ■

Upcoming Events *(Also available on the NCS website under the [Events tab.](#))*

November 5

The NCS Younger Members Forum sponsors its monthly Happy Hour from 6-8 p.m. in Downtown, Washington, DC. Join other younger members from the area for free appetizers and drink specials. Look for an upcoming e-mail announcement with more details. (See newsletter brief.)

November 6–8

ASCE will sponsor the *International Conference on Sustainable Infrastructure 2014* in Long Beach, CA. The event will focus on sustainability in the built environment, presenting relevant engineering research, demonstrations, and applications that contribute to competitiveness and well-being. For additional information, click [HERE](#).

November 7

Attend Virginia Tech's [Public Private Partnership] P3 Leadership Workshop at their Research Center in Arlington, VA. Leaders will describe the effect of culture on three critical elements of leading a successful partnership: the notions of public-ness, shared space and trust. Workshop participants will engage in group discussions, examine case studies and be challenged to consider P3s as more than just mediums for transportation and utilities projects. [Register](#) by November 3.

November 8

The 2014 ASCE Region 2 Assembly at the Penn State Capital Campus in Middletown, PA. **All Sections, Branches, Younger Member Forums, Student Chapters, Faculty Advisors and Practitioner Advisors are strongly encouraged to attend.**

Attend presentations on current engineering design practices, interact with students, professors, and practitioners, and learn about what ASCE can do for you. One focus of this year's Assembly is to foster interaction between ASCE Student Chapters, Engineers Without Borders Student Chapters, and YMF. Another is to encourage all to get more involved and make an impact as an engineer beyond our work. For more information, contact [John Casana](#).

November 18

How do you construct a 1.25 million sq ft building on an 100,000 sq ft site? Learn about the Marriott Marquis Hotel's top-down construction at the November NCS meeting at the Hilton Arlington. (See newsletter lead article.)

January 9–10, 2015

Save the Date! 2015 Workshops for Section and Branch Leaders (WSBL) for Regions 1, 2, 4, & 5 will be held at the Hyatt Regency in Miami, FL. Concurrently, there will be a Workshop for Student Chapter Leaders and the

Eastern Regional Younger Members Council annual meeting. The Eastern Regional Younger Member Council is offering social events during the conference. For more information, please contact [Christian Manalo](#).

January 20, 2015

Join us for the NCS monthly dinner meeting at the Hilton Arlington where Ms. Monica Backmon, Executive Director of the Northern Virginia Transportation Authority will share with us the details behind long-term transportation planning in Northern Virginia and reveal future plans for the area. (See newsletter brief.)

February 22–28, 2015

Engineers Week. Share your enthusiasm for engineering and make a difference in a young person's life. Visit the site and look for more information in upcoming newsletters.

August 23–26, 2015

ASCE will sponsor *Pipelines Conference 2015* at the Baltimore Marriott Waterfront Hotel in Baltimore, MD. The conference will focus on recent advances in underground pipeline engineering and construction. Abstracts are due by **November 13, 2014**, and registration will open in March 2015. For more information, click [HERE](#).

Employment Clearinghouse

The ASCE-NCS provides the Employment Clearinghouse as a free service to its membership. The Clearinghouse allows members to post short notices for available positions or candidates seeking employment. All employers listed herein are equal opportunity employers. If you have questions, are seeking employment or would like to post a position please contact the [newsletter editor](#) and visit our [jobs page](#).

January 2015 Section Meeting

Long-Term Transportation Planning in Northern Virginia

With an ever-growing population and increasing commuter traffic, the Northern Virginia region – like many other thriving urban areas – must find ways to enhance and maintain its current transportation infrastructure, while at the same time facing the constant challenge of determining how these much-needed projects will be funded – and ultimately constructed. Join us in January as the NCS kicks off 2015 with a presentation by Monica Backmon,

Executive Director of the [Northern Virginia Transportation Authority \(NVTA\)](#), who will discuss long-range planning for future transportation projects in Northern Virginia. Ms. Backmon has a Master's Degree in Urban Planning from the University of Illinois at Urbana-Champaign, and served as Prince William County's regional transportation planner for nearly ten years before assuming her current role as Executive Director of the NVTA in May of 2014. ■



The Authority
for Transportation in Northern Virginia