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**AECOM GARNERS TOP AWARD IN ACEC/MD ENGINEERING EXCELLENCE AWARDS COMPETITION**

The American Council of Engineering Companies/Maryland (ACEC/MD) is pleased to announce that AECOM received the **Grand Award** in the 2012 ACEC/MD Engineering Excellence Awards (EEA) compe-

tion for the *Mary Catherine Bunting Center at Mercy* project. The 13 finalists in this prestigious competition were recognized for diverse accomplishments that exemplify today’s engineering challenges.

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**2012 GRAND AWARD** *The Mary Catherine Bunting Center at Mercy designed by AECOM*

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312 N Charles Street, Suite 200  
Baltimore, Maryland 21201  
(410) 539-1592  
FAX (410) 685-5470  
[www.acecmd.org](http://www.acecmd.org)

## PRESIDENT'S MESSAGE

by Jeffery P. McBride, P.E.

### "Milk, Bread and Toilet Paper" ....

Reminds me of the consistent refrain of our elected leaders prior to and after failing to pass the budget at the close of the 2012 legislative session. You are now thinking what the heck is Jeff talking about now? Allow me to explain. As we know, prior to any forecasted snowfall in the Baltimore area, the local TV stations dispatch a number of reporters to local grocery store lots. I am convinced they camp out until some car comes rolling into the lot ejecting oil smoke and fenders rubbing tires indicating worn shocks. They then ambush the unfortunate shopper getting out of the car, stick a camera in their face asking "what are you here to purchase" ... to which the shocked citizen replies... "Well, ya know, figured I better pick up some milk, bread and toilet paper". Our elected leaders in Annapolis like to say something just as silly. When asked about their failure to debate and enact a budget as required by State law, they say we will now be faced with the "doomsday" prospect of cuts to "education, health care and public safety". Of course the difference is the person in the grocery store lot is actually telling the truth, while the elected official is lying through their teeth. However, you simply cannot argue the effectiveness of this hollow threat on the gullible public.

During this legislative session, when our organization was trying to make some reasonable arguments and lobby for increased transportation funding, our elected leaders (at least those on the larger half of the aisle) were devising any number of ways to raise income taxes, fees and shift debt back to the local jurisdictions, all of which did not include any serious consideration of transportation funding increases or a restoration of previously diverted funds from the Transportation Trust Fund. Any of us who have perused a newspaper, blog or listened to the radio in the last month have been utterly deluged with dire projections of \$500 million in "doomsday" spending cuts. Sounds scary doesn't it? What they fail to indicate is that the 2013 budget included \$1.5 billion in increased spending, and the "cuts" were really just a reduction in the proposed budget increase. So, even if the doomsday budget stands, the State budget increase is around \$700 million to \$1 billion for FY 2013, depending on which version is debated. How did we get here? Some history is in order. In 2007 and 2008, the State budget was \$28.8 and \$29.6 billion respectively. In 2009 thru 2011, federal "porkulus" spending caused the State's budget to expand by \$3.5 billion annually. Even after the federal "spendulus" ended, the

State was addicted like a meth addict, and during the biggest recession in almost a century, you guessed it, they increased spending by \$1.7 billion in 2012 and have been attempting to add another \$1.5 billion to that in 2013. So, to put it all together, between 2007 and 2012, a period of massive economic upheaval and strife, the State of Maryland increased spending by \$6 billion annually to something north of \$35.5 billion. As I have said before, you can't make this up.

On the \$500 million "doomsday" cuts, let's put this in terms easier to grasp. Your family wants to take a nice vacation for a week at the beach. Your 2012 budget for the week was \$3,480. For 2013 you want to spice it up and go for \$3,630... but in the end you have to cut that back to \$3,580... I would assume you would not refer to this as the "doomsday" vacation.

Now, during this past legislative session we go down to Annapolis on more than one occasion to talk about and offer testimony for increased gas tax funding and protection of the Transportation Trust Fund. The State's gas tax has not increased in almost 20 years and we are thrown out of legislative offices, and asked "what State do you think we live in?" And your President and Executive Director were subjected to a musical serenade by a bike riding troubadour with a "NO NEW GAS TAX" sign on his bike. It has been an interesting session to say the least. Needless to say had even a percentage of the increased spending over the last seven budget cycles been directed toward transportation funding, our goals today would certainly be different. Instead, we have had diversions from the fund, no revenue enhancements and even with the support of the Governor, late in coming as it was, our funding bills did not even get out of committee. Probably the most frustrating thing for me personally is after the significant TTF diversions, we are forced to go down and in effect, plead for increased gas tax revenue to basically offset what was diverted. So in the end, we would be back to 1992 funding levels, at least on a per gallon basis.

What may even be a little more disheartening to me is the level of overall support from our member firms with respect to the transportation funding issues. To be fair, we have firms and individuals that work tirelessly before, during and after the legislative session to protect our business interests. However, as a vertical market engineer, I am still somewhat confused by what appears to be an overall lack

of urgency by transportation oriented firms during this particular session. Given the state of the TTF, recent funding raids and lack of leadership from the Governor's office, it was imperative that everyone participate in our efforts. In the January-February message, I commented on what I thought was a tepid response, at least from the standpoint of attendance at the START rally on January 19th. In the November-December message I raised the statistic that less than 25% of our member firms contribute to our CEPAC fund. Now, we conclude our legislative session and I am confronted with the stark statistics of our recent transportation funding letter campaign. During the legislative session, thanks to the assistance of a member firm, a very nice automated letter link was sent out. Using this link, anyone could generate a customized letter in support of the transportation funding bill to their respective State Delegates and Senator in just minutes, if not seconds. After about a week's time, the software was telling us perhaps as few as 125 persons had used the link. Even after urgent legislative alerts and phone calls made by the ACEC/MD office and legislative committee members, the final letter count reflected that about 400 to 500 staff members had utilized the letter feature. Folks, that is about 7 to 8% of our employee staff count. If I have to explain why that is troubling, we have big problems. Our firm is 100% vertical market and we participated, even yours truly. After I hit send I felt a bit like the time my buddy walked in on me during a football game and I was watching ice skating, but I digress. I know some firms have rules about lobbying and forwarding requests to employees of this nature, but give me a break here ladies and gentlemen. Is there something I don't know about, because I don't get this?

Lastly, we just returned from the 2012 ACEC Annual Conference and Legislative Summit in Washington DC. Once again, it was a top notch program. The Opening General Session speaker was Governor Haley Barbour and the Legislative Issues Session was opened by Governor Ed Rendell. If you're not attending these conferences, please consider doing so. They are well worth the time and expense. Lastly, ACEC/MD's 24th Annual Conference is rapidly approaching June 20-23rd at Lido Beach Resort, Sarasota, Florida. I hope to see everyone there!



# ACEC/MD 2012 ENGINEERING EXCELLENCE AWARDS

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## Grand Award

### The Mary Catherine Bunting Center at Mercy AECOM

*Client - Mercy Medical Center*

*Project Manager - Adrian Hagerty, AIA,  
LEED AP*

Many urban hospitals face challenges to improving the environment of care. Limited space, constraints of existing infrastructure, and inadequate access to the natural environment were the main challenges facing Mercy Medical Center as planning began on their replacement hospital, the Mary Catherine Bunting Center. Instead of moving to the suburbs, as many urban hospitals have, the Bunting Center brings the verdant landscape of a country garden to the city and continues a mission of providing healthcare to Baltimore's residents that dates to 1874.

Mercy Medical Center selected AECOM, via a design competition, to design their new replacement hospital, a 21-story, 700,000-square-foot building in the heart of downtown Baltimore. The desired outcome was a complex healthcare facility within a constricted urban site that contributes to the community and creates a model of urban sustainability.

AECOM's design team supported Mercy's vision in taking green architecture to a new level—the 8th floor, to be precise—by creating a unique, multilevel rooftop oasis in the center of downtown Baltimore. The new Bunting Center exemplifies sustainable architecture and innovative design. The roof-garden is a key sustainable design element in that it minimizes the building's heat-island effect,

reduces demand on storm water systems, improves surrounding air quality, and reduces noise pollution. Building systems design includes strategies beyond standard practice for reducing water usage, optimizing energy performance, improving outside aesthetics, and minimizing indoor pollution. This project is of significant local prominence with a design that is both forward-looking and respectful of Baltimore's 282-year history.

## Outstanding Engineering Projects:

### Maryland Port Administration, Innovative Use of Dredged Material

#### Schnabel Engineering Inc.

*Client - Maryland Port Administration*

*Project Manager - Dennis Grubb, PhD, PE*

Under the Maryland Port Administration's (MPA), new "Innovative Reuse of Dredged Material" program, Schnabel Engineering's study provides a unique way to beneficially use 500,000 cubic yards of Cox Creek dredged material (DM) per year.

The MPA is responsible for all of the DM dredged from the Baltimore Harbor shipping lanes. Presently the only permitted use for DM is disposal in the Cox Creek Dredge Material facility. Schnabel's study demonstrated for the first time that blending of Cox Creek DM and steel slag fines (SSF)—another waste material—could produce earth fill materials to be used for construction of highways, parking lots and other construction fill needs.

The soft consistency and organic matter content of the DM make it unusable as fill material without blending it with other earth fill, cement, or crushed stone. All of these conventional blending materials are quite costly and make the DM fill uneconomical. Schnabel searched the Baltimore area for a material with little or no cost that would improve the DM for use as fill material. They focused their search on granular waste materials like crushed concrete, quarry

fines, and industrial slags in the Baltimore area. The search led them to SSF from the Sparrows Point Steel Mill complex, which is located across the harbor from Cox Creek. Steel slag is a by-product of the steel making process and SSF are a by-product of the recycling of steel slag into construction aggregates. Presently the SSF has no use and is stockpiled.

The MPA's Innovation Reuse of Dredge Material Program is an excellent example of public-private cooperation to solve an important social challenge, beneficial reuse of dredge material and industrial by-products.

Schnabel's approach was unique in that blending DM with an industrial waste had never been done before. They also improved the environmental quality of the DM and demonstrated that mixing and placing DM/SSF blend could be performed economically with conventional construction equipment. Future large scale use of DM/SSF blends will reduce the need for dredge material landfills and conventional earth fill quarries.

### Rehabilitation of the Thomas J. Hatem Bridge

#### Wallace Montgomery & Assoc, LLP

*Client - Maryland Transportation Authority*

*Project Manager - David Borusiewicz, PE*

The Hatem bridge is the oldest of Maryland's toll facilities and spans 7,500 feet across the Susquehanna River, local roadways and a railroad, between Havre de Grace & Perryville in northeast Maryland. One of two major Susquehanna River crossings, the bridge carries over 11 million vehicles each year, making it a critical artery for residents, businesses, and responders. The bridge was completed in 1940 and rehabilitated in the mid-1980s. The bridge was deteriorating at an accelerated rate with localized deck puncture failures that could affect pedestrian, vehicular, railroad and boat traffic below. Maintenance efforts severely taxed MDTA and, with annual costs at nearly \$400K, a major rehabilitation was needed. The rehabilitation had to be done without any major traffic or emergency response disruptions, while maintaining the historic character of the bridge.



Maryland Port Administration, Innovative Use of Dredged Material  
Schnabel Engineering Inc.

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## ACEC/MD 2012 ENGINEERING EXCELLENCE AWARDS

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**Rehabilitation of the Thomas J. Hatem Bridge**  
Wallace Montgomery & Assoc, LLP

To improve safety; increase serviceability and function for motorists; increase load carrying capacity; and to minimize disruption to local residents and businesses, this project required careful planning and coordination with the MDTA Board, State, County and Local governments; public outreach; design; and partnering. Nearly 1½ miles of a new wider steel grid bridge deck and parapets were incorporated to meet current federal crash-test standards. The new deck included a lightweight concrete fill, and provided significant safety and functional enhancements, with a net weight reduction that increased bridge capacity. Traffic studies confirmed that a four-stage construction scheme would not cause significant disruptions, while maintaining one lane of traffic in each direction. While maintaining historic bridge aesthetics, this project also incorporated emergency pull-off areas, highway advisory radios, variable message signs, additional signing, and extensive public coordination.

### Honorable Mention:

#### Maryland Transit Administration – Metro Fire & Security Management Systems Project

AECOM

*Project Manager - Howard Gregson, PE*

The Baltimore Metro, a 15 mile rail metro system with 8 underground stations and 6 surface stations, was constructed over three phases spanning November 1983 to May 1995. By 2004, with existing mechanical systems nearing the end of useful life, control center systems becoming obsolete and parts difficult to obtain, the MTA embarked upon the Metro Fire and Security Management

Systems Project. Goal improvements for this project included replacing or refurbishing the equipment associated with the Fire Alarm, Access Control, Public Area Ventilation, Ancillary Area Ventilation, Central Supervisory Control and local Supervisory Control and Data Acquisition (SCADA) Systems.

A contract was awarded in September 2007 and on-site construction started April 2008 with work covering 4 stages: Replacement of the Central Supervisory Control System; Non-Critical Work; Critical Work; and Final Cut-Over and Commissioning.

In December, 2010, six months ahead of schedule and \$4.6M (6.7%) under budget, all systems at the last station were commissioned. Work was completed without planned or unplanned disruptions to train service or availability of station services, and Metro patrons largely were unaware the project had occurred at all.

The Baltimore Metro now boasts fire detection and alarm systems that meet current



**Maryland Transit Administration - Metro Fire &  
Security Management Systems Project AECOM**



**I-83 Warren Road LED Roadway Lighting Pilot**  
Century Engineering Inc.

field codes, controlled access into the public areas of many stations, improved equipment status reporting and alarms, significantly improved equipment reliability and maintainability, thus modernizing and enhancing service and safety to patrons.

#### I-83 Warren Road LED Roadway Lighting Pilot

Century Engineering Inc.

*Client - Maryland State Highway Administration*

*Project Manager - Barry R. King, TSOS*

The Maryland State Highway Administration (MSHA) owns, maintains and operates over 16,000 lane-miles of interstate, primary, and secondary roads. MSHA utilizes roadway lighting as a safety feature, enhancing delineation and providing positive guidance. The cost of operating and maintaining roadway lighting consumes a significant portion of MSHA's annual maintenance budget. MSHA has established a system preservation and maintenance goal with performance measurements relating to the maintenance and costs associated with roadway lighting, and developed an overall energy reduction goal of 30 percent specifically targeting roadway lighting energy and maintenance costs.

Century developed an LED roadway lighting pilot project to research, analyze and document the energy efficiency and operational performance of LED roadway lighting. The research phase involved manufacturer interviews, review of technical specifications and product demonstrations. To evaluate energy and optical performance, thermal management, and mechanical design, five LED roadway lighting

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## ACEC/MD 2012 ENGINEERING EXCELLENCE AWARDS

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**Union Dam Demolition Design and River Channel Restoration**  
Gannett Fleming Inc.

manufacturers were selected to participate in the testing and verification process. Engineering services included new roadway plans, verification of the existing lighting system components and the creation of specific control points for each manufacturer for the development of photometric calculations. Technical and subjective evaluation data were targeted for completion during the testing and verification period. The results of the LED Pilot project will be processed by MSHA to create a new performance specification for roadway lighting, providing an alternative to current roadway lighting technology, and reducing energy consumption and maintenance costs. This will impact the sustainability, maintenance and energy costs associated with roadway lighting to meet or exceed MSHA's systems preservation goals.

### **Union Dam Demolition Design and River Channel Restoration** Gannett Fleming Inc.

*Client - Maryland Department of General Services & Maryland Department of Natural Resources*

*Project Manager - Jeffrey M. Stamm, PE*

Gannett Fleming, Inc. provided engineering design and construction phase services for the demolition of a concrete dam and for restoration of the Patapsco River, on the border of Howard and Baltimore Counties in Maryland. Union Dam, which was nearly 25 feet tall and 200 feet in length, was constructed around 1912 to serve the Union Mills in historic Ellicott City. In 1972 the dam breached during the floods caused by Hurricane Agnes. Since then, the breach has gradually eroded the

bank, and undermined a 42-inch diameter sanitary sewer that was in danger of collapsing. Removing the dam was designed to alleviate the under scour of the sanitary sewer, and further restore the natural river flow. It is one of four concrete dams on the Patapsco to be demolished as part of Maryland's ongoing fish passage restoration program.

To determine appropriate river protection measures and flood elevations, in concert with the demolition design, Gannett Fleming conducted hydrologic and restoration studies of the Patapsco River. Fluvial geomorphic assessments were conducted including cross sections and profile, and sediment transport studies. Design plans called for the use of rock vanes as a grade control structure to protect a 48-inch water line upstream of the dam, and to protect the sanitary sewer.

The project site is within the Patapsco State Park—a highly prized natural resource, teeming with fish and wildlife that is a popular recreational area for the public. Design, permitting, and construction that protected the site and accomplished the project goals; presented numerous challenges that the project team successfully overcame.

Gannett Fleming secured permits for waterways construction and sediment and erosion control, and completed 100 percent submissions for restoration of the river and removal of the dam. They also provided bid and construction phase services.



**BWI Marshall Runway - 10-28 and 15R-33L Intersection**  
Program Management Johnson, Mirmiran & Thompson

### **BWI Marshall Runway 10-28 and 15R-33L Intersection Program Management**

**Johnson, Mirmiran & Thompson**

*Client - Maryland Aviation Administration*

*Project Manager - Alan Peljovich, PE*

The Federal Runway Safety Area Compliance Mandate stipulates that all commercial airport runways must meet FAA standards for Runway Safety Area (RSA) dimension, grading, and frangibility by the end of 2015. In order to bring BWI Thurgood Marshall Airport into compliance with the Federal mandate, the Maryland Aviation Administration (MAA) initiated a \$350M Runway Safety Area, Pavement Management and Standards Compliance Program to address RSA deficiencies on all four runways at the airport.

Johnson, Mirmiran & Thompson (JMT) provided program management services to MAA to craft a comprehensive program that addressed the RSA deficiencies within the compliance period. The first project undertaken was the pavement rehabilitation and standards compliance improvements to the intersection of Runways 15R-33L and 10-28. This once-in-a-generation project was complex even by airfield design standards. To allow for milling and placement of a new structural asphalt overlay at a new design profile in accordance with FAA Standards, it included the simultaneous closure of both of the airport's primary air carrier runways for more than two consecutive days in September 2011. The dual runway closure

was made possible by utilizing the 6,000 foot Runway 4-22 to maintain operations.

Extensive coordination with the airlines, FAA, and Airport Operations was required to change flight schedules, runway approach procedures and to limit the aircraft fleet that could operate during the closure period. The closure allowed the critical airfield intersection improvements to be constructed efficiently and economically while keeping the airport in service and minimizing traveler disruption.

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# ACEC/MD 2012 ENGINEERING EXCELLENCE AWARDS

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The project included the placement of over 6,000 tons of asphalt in a 54-hour closure period.

An airline official commented that, "This was one of the best examples of airport/airline coordination on an airfield project in recent memory."

## I-70 South Mountain Welcome Centers

### KCI Technologies Inc.

*Client - Maryland State Highway Administration*

*Project Manager - Richard L. Butt, PE*

The new South Mountain Welcome Center consists of two sites strategically located along eastbound and westbound I-70 in Frederick County, Md. The sustainable facilities replace two 1970s-era rest stops that used inefficient heating systems and employed older wasteful plumbing systems. As a subconsultant to design-build contractor Kinsley Construction, KCI provided civil, structural, mechanical/electrical and geotechnical engineering and surveying services for the four-building, two-campus complex, the first Maryland State Highway Administration operational facility to receive U.S. Green Building Council (USGBC) LEED-silver certification based on the New Construction rating system.

KCI also served as the LEED project administrator, responsible for coordinating submissions to the USGBC and advising members of the design-build team. Contractor and design staff met frequently to discuss energy-saving alternatives and opportunities. A unique twist found the team employing the Multiple

Buildings and On-Campus Building Projects Application guide in conjunction with the LEED-NC v.2. building rating system to combine the four buildings and two project sites into one project submission, saving time and money by minimizing the effort required to document the project.

This environmentally friendly facility features energy-efficient lighting, geothermal heating and cooling, water saving devices, and upgraded sewer lines. More than 20 percent of the materials used featured recycled content, and 50 percent of the materials used were manufactured or extracted locally. The facility's energy performance is 21.5 percent more efficient than standard buildings.

Through collaboration, innovation and a commitment to sustainability, the new I-70 Welcome Centers now offer motorists a safe, environmentally-friendly facility to investigate the many destinations and adventures the state has to offer.

## MD 355 Interchange Design Build

### KCI Technologies Inc.

*Owner - Maryland State Highway Administration*

*Client - Concrete General Inc.*

*Project Manager - Stephen F. Drumm, PE*

In partnership with Montgomery County, the Maryland State Highway Administration worked with the design-build team of

Concrete General Inc. and KCI Technologies Inc. to reconstruct the existing MD 355 intersection at Montrose/Randolph Road in Gaithersburg, capitalizing on an opportunity to connect newly constructed multi-lane Montrose Parkway with existing Randolph Road. Completion of the \$25 million project increased capacity along the corridor while easing congestion and improving safety and traffic flow.



MD 355 Interchange Design Build KCI Technologies Inc.

The most significant engineering challenges were associated with the lowering of the new Randolph/Montrose Road connection under MD 355. The new interchange required a cut in excess of 25 feet, severely impacting traffic, drainage and utilities that had to remain in service until they could be relocated and the interchange construction completed. The team determined that by shifting MD 355 to the east along the proposed exit and entrance interchange ramps, the west side of the interchange would be opened for preliminary excavation of the new parkway road and construction of the bridge, with an additional benefit of reducing the depth of construction for the storm drain, easier access for utility relocations, and reduced impact to the park and ride lot. The team turned this challenge into an opportunity by investigating all of the project elements and proposed improvements that could be redesigned to save time and materials. This innovative solution enabled engineers to investigate re-phasing and relocating the MD 355 detour route along the interchange ramps, solving a complex problem while saving costs.

The interchange was opened to traffic on time and on budget in October, 2010, easing traffic flow for the more than 55,000 motorists that use the facility every day.

## Baltimore City Downtown Infrastructure Improvements

### McCormick Taylor Inc.

*Client - Baltimore City Department of Transportation*

*Project Manager - Jim Dorsey, PE*

In May 2010, the Baltimore City Board of Estimates approved a five-year agreement with



I-70 South Mountain Welcome Centers KCI Technologies Inc.

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# ACEC/MD 2012 ENGINEERING EXCELLENCE AWARDS

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the Baltimore Grand Prix (BGP) to bring Indy-car racing to the streets of downtown Baltimore. The City Department of Transportation tasked McCormick Taylor, Inc. (MT) with preparing a complete final design package for this \$4.1 million project suitable for advertisement, including required permits, specifications, cost estimates, and the PS&E package, within an unprecedented three month time frame. The main goal of this project was to bring the streets of Baltimore up to the stringent criteria of the Indy Racing League (IRL). Extensive concrete repairs were necessary on Pratt and Light Streets to accommodate the rigid suspension and minimum clearance of the Indy race cars. No utility structure, patch or crack could protrude above or recess below the adjacent surface greater than ¼ inch. This led to a concern of damaging the aging water and sewer mains under the road during construction. The solution was to saw cut the slabs into smaller pieces and lifting them out in lieu of breaking them up. This was a faster solution and no utility impacts occurred. Because it was partially federally funded, another component was making the streets along the track fully ADA compliant. This required the construction of over 200 curb ramps, and subsequent signal improvements. McCormick Taylor successfully met each project milestone deadline and remained on budget, resulting in project advertisement in July 2010, and award of the construction contract in August 2010. Following advertisement, decisions by the BGP to relocate pit row and change the track layout, resulted in MT preparing the largest plan addendum in Baltimore City history in a four week period.



**Masonville 48-Inch Water Main Relocation  
Rummel, Klepper & Kahl LLP**

## Masonville 48-Inch Water Main Relocation

**Rummel, Klepper & Kahl LLP**

*Client - Maryland Port Administration (MPA)*

*Project Manager - John Moore, PE*

This assignment involved relocating 3,342 linear feet (lf) of an existing 48" water main that crosses the Middle Branch of the Patapsco River between Fort McHenry and Masonville.

The MPA developed the Masonville Dredged Material Containment Facility (DMCF) to provide a stock-pile area for spoil material dredged from Baltimore's Inner Harbor and the Patapsco River. The site chosen for the new DMCF required relocation of an existing 48" water main constructed in the early 1950's and owned by Baltimore City. The water main is a critical transmission main supplying heavy industrial areas in South Baltimore and northern Anne Arundel County.

Addressing all the technical challenges and many scheduling and sequencing requirements imposed by the MPA and the city, the RK&K team developed an innovative design approach for relocation of the water main.

Among the technical challenges was the requirement to make a connection to the existing main at a location 1,200' offshore and the need to construct a major cofferdam to allow this connection to

be made in a dry environment, further complicated by the inability to shut down the main except for short durations. Additionally, major thrust forces had to be addressed and poor soil conditions to -85' required an innovative design response.

The RK&K team answered these challenges by incorporating the following design elements: 900' of submarine water main on pile bents connecting to the existing main located 35' below the Patapsco River; a robust cathodic protection system to protect against aggressive soil conditions; underwater/landside thrust blocks constructed on pile foundations; special precautions and disposal methods in construction to deal with contaminated soils; and special construction phasing due to city limitations on very short shutdowns during the winter allowing connection to the existing water main.



**Barack Obama Elementary School  
Sidhu Associates Inc.**

## Barack Obama Elementary School

**Sidhu Associates Inc.**

*Client- Prince George's County Public Schools*

*Project Manager - Thomas L. Foulkes, PE, LEED AP*

This project is a new 80,000 sq. ft. elementary school certified as a LEED® Gold project that opened in April of 2010. The design focuses on energy conservation and thermal comfort.

Energy efficiency is obtained through the use of a geothermal heat pump system with dedicated outdoor air heat pumps with energy recovery units providing ventilation air.

Water conservation is achieved by providing efficient plumbing fixtures that reduce water



**Baltimore City Downtown Infrastructure Improvements  
McCormick Taylor Inc.**

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## ACEC/MD 2012 ENGINEERING EXCELLENCE AWARDS

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consumption by more than 40% through the use of waterless urinals, dual-flush water closets, and low-flow lavatory faucets and shower heads. A high efficiency water heater fulfills the hot water demand.

Electrical work includes coordinating the electrical service needs with the local utility company, the design of the low voltage power distribution supplying power to all equipment, and interior and exterior lighting designed keeping in view the LEED® requirements.

Also included in the design is the fire detection system, the design of the stage lighting and special sound system, the TV studio lighting, the computer lab, the kitchen equipment, and an Emergency Back-up Diesel Generator.

### An Innovative Method for Tension Assessment of Aged P-T Bars

#### URS Corporation

Client -Maryland State Highway Administration

Project Manager - Y. Edward Zhou, PE

On many bridges designed prior to the 1980s, hammerhead-shaped reinforced concrete piers with a small cantilever span-to-depth ratio experienced vertical cracks in the pier cap. As a retrofit measure, external high strength steel post-tensioning (P-T) bars were installed, each

with a sustained tension over one hundred tons. Load cells were often installed, with the intention of monitoring the magnitudes of the tension over the entire service life of the bridge. Nine bridges in Maryland experienced such cracking, including two steel structures with cracks at pin connections, and were retrofitted with external P-T bars around 1990. In 2009, about half of the load cells were found to be dysfunctional and many of those that were operational yielded suspect readings. Replacement of the built-in load cells would require difficult field operations to de-tension and re-tension each bar and control force balance of the Post-Tensioning system during the replacement. The work would also require costly access vehicles and lengthy disruptions to traffic.

URS Corporation, in collaboration with Bridge Diagnostics, Inc. (BDI), successfully developed and applied an innovative, rapid, and cost-effective method to assess the tension force in the P-T bars. Known as the Taut Cable Vibration Measurement (TCVM) technique, this method determines the existing tension in taut flexible cables from measured vibration

frequencies based on cable theory. URS successfully applied the TCVM method for tension assessment of 416 P-T bars on the nine bridges across Maryland, with an estimated accuracy to within 5% based on field calibration tests. The non-invasive procedure did not cause any changes to the existing system and the field testing time for one bar was typically around 15 minutes. The cost of using this innovative methodology is estimated to be about 10% of the cost for replacing the existing load cells with new ones (not including the costs for collecting readings from the new load cells) with significantly less disruption to traffic.



An Innovative Method for Tension Assessment of Aged P-T Bars  
URS Corporation

## HBA'S JASON BOROWSKI SELECTED AS THE 2012 YOUNG PROFESSIONAL OF THE YEAR

Annually, in conjunction with our parent organization, the American Council of Engineering Companies, ACEC/MD presents a Young Professional of the Year Award. This award recognizes our member firms' young engineers by highlighting their interesting and unique work, and the resulting important impact on society.

Jason A. Borowski, PE, LEED® AP has established himself as a reputable and talented engineer within the mechanical/electrical/plumbing engineering community. A vice president and principal with Hoffman Borowski and Associates LLC, he has designed mechani-

cal systems for over 20 LEED-certified projects, and in 2010, presented on the LEED v3 rating system to the Baltimore Chapter of the Associated Builders and Contractors.

Also in 2010, Jason was asked to join the York Central Market Planning Committee as an expert on sustainable heating, ventilation and air conditioning systems. The goal of the committee was to determine viable methods for integrating sustainable practices into the renovation and revitalization of the city's original 1888 market house. Jason's proposal—the use of a chilled beam HVAC system—has been incorporated into the renovation design.

Jason is also a member of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the U.S. Green Building Council. He earned a bachelor's degree in architectural engineering from The Pennsylvania State University in 2005, and is a registered engineer in Pennsylvania as well as a USGBC LEED AP.





# 24TH ANNUAL CONFERENCE JUNE 20-23, 2012

## ROOM DEADLINE IS MAY 20TH

ACEC/MD's 24th Annual Conference, being held June 20-23, 2012 at the Lido Beach Resort, located in Sarasota, Florida, is right around the corner, and you need to get your hotel room reservation today. The cut-off date is May 20th, but when ACEC/MD's room block is gone you will not be able to take advantage of special conference room rates.

If you have seen the advertisements promoting the location of the Baltimore Orioles spring training location, you know that the Sarasota area is one of the jewels of this country. Sparkling water, the number one beach in the nation, and world class restaurants and shopping are the hallmark of Florida's suncoast.

In addition to the incredibly beautiful setting at Lido Beach Resort, this year's conference features:

- A discussion by Alliant Group on the Research and Development Tax Incentive that could be available to firms offering services in any engineering discipline.
- A presentation by the renowned South Florida Center for Urban Transportation Research.
- A behind the scenes technical tour of the world class Mote Aquarium.

When it is time to wind down, conference attendees will be able to enjoy the following activities:

- Participants will be able to partake in networking activities at our Gulf side destination resort.
- Golfers will have the opportunity to test their meddle on the beautiful but challenging University Park Country Club Course.
- Non-golfers will be able to tour the historic Ringling museum.
- Guests will enjoy a spectacular sunset dinner cruise on the Sarasota Bay.

All these activities are packed into three fun-filled, informative days. Be sure to contact Lido Beach Resort today at 800-441-2113. Our discount rate expires May 20th or until the room block is exhausted.

### Schedule of Activities

#### Wednesday, June 20

3:00 - 4:30 PM – ACEC/MD Executive Committee Meeting

6:00 – 8:00 PM – Welcome Reception

#### Thursday, June 21

7:00 AM – Breakfast

9:00 AM – Golf at University Park

9:30 AM – Tour of Ringling Museum of Art

6:00 PM – Reception

7:00 PM – Banquet

#### Friday, June 22

7:00 AM – Breakfast

9:00 AM – Sessions: -Research and Tax Incentives for the Engineering Industry by Alliant Group.

-Presentation by the South Florida Center for Urban Transportation Research

11:30 AM – Reception and General Membership Luncheon

6:30 PM – Sunset Cruise

#### Saturday, June 23

7:00 AM – Breakfast

9:30 AM – Technical Tour of the Mote Aquarium

Room rates are only \$129 or \$179 per night. For those wishing to extend their stay, the hotel has agreed to honor these attractive rates two days before and two days after our conference. Book your hotel reservation by May 20th by calling 1-800-441-2113.

## PROFESSIONAL DEVELOPMENT

- May 7**      *ACEC/MD 45th Annual Afternoon at the Club*  
White Hall, MD. Contact the ACEC/MD office for more information.
- May 9-11**    *APWA Joint Conference*  
Princess Royale, Ocean City. Go to <http://VADCMD.APWA.net>.
- May 16**      *ACEC/MD Environmental Forum*  
ESB, Baltimore. Contact the ACEC/MD office for more information.
- June 6**        *Troubleshooting Concrete Construction.*  
Baltimore, MD. Presented by the American Concrete Institute. For more information call 248.848.3815.
- June 7**        *MDOT Modal Program*  
ESB, Baltimore. Co-sponsored by ACEC/MD and ACEC/MW. Contact the ACEC/MD office for more information.
- June 10-12**   *Marcellus & Utica Infrastructure Summit 2012*  
Pittsburgh, PA. Presented by Information Forecast, Inc. For more information call 818.888.4444 or go to [www.informationforecastnet.com](http://www.informationforecastnet.com).
- June 12**      *Matchmaking Program*  
MDOT Headquarters, MD. Co-hosted by MDOT and ACEC/MD. Contact the ACEC/MD office for more information.



## BRIGADIER GENERAL KELM RECOGNIZED WITH 2012 PRESIDENT'S AWARD

At the President's discretion, ACEC/MD honors an individual whose actions have greatly contributed to the advancement of the consulting engineering profession and the citizens of Maryland. This year's winner, Brigadier General Brian Kelm's career began in the U.S. Navy and spanned 26 years until his retirement in 2003. While on active duty, he served in the Civil Engineer Corps of the United States Navy. His assignments included public works officer/officer in charge of construction at Naval Air Facility El Centro, Calif., special assistant to the assistant secretary of the Navy for research, development and acquisition, chief of staff for the Second Naval Construction Brigade in Little Creek, Va., and commander of the 20th Naval Construction Regiment and Commanding Officer Naval Construction Battalion Center in Gulfport, Miss.

He joined the Maryland Defense Force (MDDF) in 2006 and founded an Engineer Corps. Now redesignated as The Maryland Defense Force 121st Engineer Regiment, it provides a professional, organized, trained, uniformed rapid-response volunteer force of engineers of all disciplines. It assists the National Guard, Maryland Emergency Management Agency (MEMA), state and local government agencies, and civil relief organizations in response to impending or actual emergencies. The MDDF is one of the four elements of the Maryland Military Department, which also includes the Maryland Army National Guard (MDARNG), the Maryland Air National Guard, and MEMA.

It is estimated that the volunteer work of the MDDF Engineer Corps saves the state of Maryland more than \$1 million dollars annually, while providing an outlet for engineers to donate their time and valuable skill sets.

General Kelm's military awards include the Legion of Merit with one gold star, Meritorious Service Medal with two gold stars, Navy Commendation Medal with silver star, Navy Achievement Medal, Naval Expeditionary Medal, Southwest Asia Service



Medal with two bronze stars, and Fleet Marine Force insignia, Global War on Terrorism Service Medal and Kuwait Liberation Medal among others.

Kelm holds a bachelor's degree in civil engineering from Iowa State University and a master's degree in civil engineering from Purdue University. He is also a graduate of the United States Naval War College, and is a licensed

professional engineer in the state of Maryland and Wisconsin.

### Past Recipients

- 1997 R. Charles Avara | former Delegate in MD General Assembly
- 1998 Gene Lynch | Maryland Department of General Services Secretary
- 1999 David Winstead | former Maryland Department of Transportation Secretary
- 2000 none
- 2001 Emil Kordish, PE | past ACEC/MD President; retired - Rummel Klepper & Kahl, LLP)
- 2002 Liz Homer | former SHA Deputy Administrator
- 2003 Delegate Casper Taylor (former Speaker of the House in MD General Assembly)
- 2004 Francis Kuchta, PE (former Baltimore City DPW Director)
- 2005 Carl Scheffel, PE | Fox Industries Inc.
- 2006 Neil Pedersen | SHA Administrator
- 2007 William Gluck | Maryland Department of General Services
- 2008 Don Sherin | SHA Office of Consultant Services
- 2009 John Porcari, PE | Maryland Department of Transportation Secretary
- 2010 Jaswant Dhupar, PE | former Baltimore City DPW Engineering and Water and Wastewater Division Chief
- 2011 Paul Wiedefeld, PE | Maryland Aviation Administration (MAA) Executive Director



## BARRY BRANDT RECOGNIZED WITH 2012 COMMUNITY SERVICE AWARD WINNER

Annually, when appropriate, ACEC/MD honors a member firm representative that has made a significant contribution to the community by volunteering their time and expertise.

Barry Brandt is a founding member of the 100

Club of Anne Arundel County. The organization is dedicated to supporting the families of police officers, fire fighters, and EMS technicians who are killed in the line of duty. The organization's endowment is over \$450,000, and today the club boasts over 80 members.

Since 2006, Mr. Brandt has served as an officer of the 100 Club. He has led the annual banquet, and is part of their public awareness initiative to promote the organization's mission. He assists in the annual awarding of the Duke G. Aaron Scholarship, and is participating in amending the bylaws to allow endowment funds to be used to support specialized equipment purchases for first responders.

In addition to his service with the 100 Club, Mr. Brandt participates in the Assisted Living Outreach of the New Life Church of Pasadena, MD. The program provides monthly visits to nearby facilities in which members conduct church services and provide fellowship to residents. Mr. Brandt has led the visits for up to two facilities for the past five years.



## AWARD JUDGES PROVIDE VALUABLE SERVICE TO ACEC/MD

We would like to express appreciation to the following judges that played an integral part in the success of our Awards Program. The distinguished panel of judges for this year's awards included:

### EEA Judges

Rachel Ellis, Gannett Fleming (Chair)  
 Rudy Chow, City of Baltimore Bureau of Water & Wastewater  
 William Gluck, Maryland Department of General Services  
 Doug Hutcheson, Maryland Transportation Authority  
 Henry Kay, Maryland Transit Administration  
 William Korpman, Baltimore County Department of Public Works  
 Umesh Murthy, Transtech Engineering Consultants  
 Ron Pyles, Kim Engineering

### Individual Awards Judges

Rachel Ellis, Gannett Fleming (Chair)  
 Michael Myers, PE, Rummel, Klepper & Kahl  
 Amy Lambert, CPSM, KCI Technologies Inc.  
 Mike Myers, PE, Rummel Klepper & Kahl LLP  
 Ray Streib, Development Facilitators  
 Stu Robinson, A. Morton Thomas & Associates (ACEC/MD Director)  
 Jeff McBride, EBL Engineers (ACEC/MD President)



## THANKS FOR BEING A SPONSOR

ACEC/MD would like to extend its sincere appreciation for the support of our Awards Banquet Sponsors. This event would not be a success without the participation of the following firms:

### PLATINUM:

Stambaugh Ness, PC

### GOLD:

Century Engineering

Indam Engineers

Johnson, Mirmiran & Thompson

Rummel, Klepper & Kahl

Wallace, Montgomery & Associates

### SILVER:

A. Morton Thomas & Associates

AECOM

Ames & Gough

Development Facilitators

EBA Engineering Inc.

Gannett Fleming

Greenhorne & O'Mara

KCI Technologies

McCormick Taylor

Schnabel Engineering

Straughan Environmental

WBCM

### BRONZE:

Kim Engineering

Phoenix Engineering

Prime Engineering



## NEW MEMBERS

The following firm has been elected to membership:

**MIMAR ARCHITECTS, INC.**

7000 Security Blvd., Suite 320,

Baltimore, MD 21244

Telephone: 410-944-4900; FAX 410-944-8044

Rep/Contact: Elmer Rayneir Flores

Gutdula egatdula@mimarch.net

Website: www.mimarch.net

*Brief History and Activities of the Firm:*

*Established in 1992, Mimar Architects is an architectural/engineering firm with a design*

*staff of architectural, graphic, interior design, facilities assessment experts, construction managers, civil, structural, and mechanical and electrical engineers, and master planners. The firm is a certified MBE/SDBE firm with MDOT, VDOT, PENNDOT, NJ Dot, Main Dot, MWAA and WMATA as well as having its SWaM certification in Virginia. Services provided by the firm include structural engineering for industrial, institutional, and commercial facilities, planning and design of mechanical and electrical systems for industrial, institutional, and commercial facilities.*

*Engineering activities include the design of air conditioning, communications, fire protection, heating, lighting, plumbing, power distribution, process piping, refrigeration, site utilities, temperature control, and ventilation systems.*

We welcome this firm as a member of ACEC/MD. Be sure to add their information to your records. The next time you see one of their representatives, please take the time to let them know we're glad that they have joined the Council!



# AMERICAN COUNCIL OF ENGINEERING COMPANIES/MARYLAND

312 N CHARLES STREET, SUITE 200  
BALTIMORE, MARYLAND 21201-4310

POSTMASTER: ADDRESS CORRECTION REQUESTED

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March-April, 2012

## MEMBER NEWS

**DEVELOPMENT FACILITATORS, INC. (DFI)** recently announced the following:

- *Dan Chavis* has been appointed President
- *Raymond E. Streib, PE* has assumed the role of Chairman of the Board
- *Dave Wissmann* has been promoted to Director of Construction Management and Inspection Services
- *Jeff Mozal* has been hired to assist in the supervision of projects and inspectors
- *Robert M. Thommen* joined the firm as a Project Supervisor

**DEWBERRY** announces the election of *Barry K. Dewberry* to the position of Chairman of the Board. *Sidney O. Dewberry*, outgoing Chairman, will transition into the role of Chairman Emeritus and Founder.

**EA ENGINEERING, SCIENCE AND TECHNOLOGY** recently announced the addition of Senior Scientist *John Morris* to support the expansion of its North American Ocean Science projects capacity. The firm also announced that *Darl Kolar* has been appointed to the Board of Directors of the ASCE – Eastern Shore Branch.

**GREENHORNE & O'MARA** has named *James A. DePietro* Chief Information Officer. He has more than 20 years at the firm.

**JOHNSON, MIRMIRAN & THOMPSON (JMT)** is pleased to announce the following:

- After previously serving as Chief Operating Officer, *John A. (Jack) Moeller, P.E.* was appointed President.
- *Fred F. Mirmiran, P.E.* has been appointed as the Chairman of the Board of Directors of the firm.
- *Daniel T. Cheng, P.E.* has been appointed as the Chairman of the Board of Trustees for the firm's ESOP.
- The following individuals have been promoted:  
To Associate - *Kristin Aiosa; Jennifer Reynolds; Phil Maddox; Erik Wren; Rodney King; Jill Jameson; Kenneth Mattlin, PE; Benjamin Cartwright, PE; Samantha Saveri, AICP; Deanna Guerieri-Phillips; Venkat Malkayigari, PE; Kevin Camponeschi; Stevie Eveland, PE; Gregory Naylor, PE; and Matthew Straughan, PE.*

To Senior Associate - *Jun Zhao, PE; Joseph Cole, Jr., PMP; Robert Pliszka, Jr., PMP; and Beth Kilbourne, PE.*

**KCI TECHNOLOGIES, INC.** is pleased to announce the promotion of *Douglas V. Goldsmith* to Vice President. He currently leads the firm's Geospatial Solutions Practice in the Mid-Atlantic Region.

**NILES, BARTON & WILMER**, an Affiliate Member firm, has named *Craig D. Roswell* as its new ACEC/MD representative.

**RJM ENGINEERING, INC.** is pleased to announce that they have relocated their office to:

6031 University Blvd., Suite 290  
Ellicott City, MD 21043

Their phone and fax will remain the same: phone 410-730-1001; fax 410-730-5403.

**WALLACE, MONTGOMERY & ASSOCIATES** is pleased to announce that *Robert Hopkins, P.E.* has joined the firm as a Project Manager. He has over 30 years of experience in all aspects of civil and environmental engineering.