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Consulting Engineers

“Together We Achieve The Extraordinary”

TEAMWORK

New Jersey
New York
Pennsylvania
Minnesota

Route 70 Over Manasquan River Wins Project of the Year

The **Route 70 over Manasquan River Bridge Replacement** Project has been recognized in the State of New Jersey as an example of excellence and the success that can be achieved when the Owner, Engineer and Contractor work together to bring about the successful completion of a project. On May 12, 2009 this \$53 million project was selected for the “Project of the Year” award given annually by both the North-Central

and Southern New Jersey Sections of the American Society of Highway Engineers for projects over \$5 million.

Route 70 continued its winning streak picking up the “Grand Award” at the 46th Annual Concrete Awards Dinner on May 14, 2009. The winning team received the coveted “Rocky” awards from the New Jersey Chapter of the American Concrete Institute and the New Jersey Concrete and Aggregate Association.

Following this banner week, the Route 70 project was nominated by the New Jersey Department of Transportation for an AASHTO America’s Transportation Award. The project has also been recommended to the Precast Concrete Institute to be considered for a precast concrete bridge award.



Yacovino Selected as Engineer of the Year

The Professional Engineers Society of Mercer County has chosen Dan Yacovino, P.E. as the PESMC Engineer of the Year. A former employee of the NJ Department of Transportation (1974-1999) and former Public Member of the NJ State Board of Professional Engineers and Land Surveyors, Mr.

Yacovino is the Highway/Traffic Group Manager for Arora and Associates, P.C., in Lawrenceville. Mr. Yacovino has over 30 years experience in Highway and Traffic Design and Management and serves as Arora’s Project Manager for the Pulaski Skyway Repairs, NJ Turnpike Widening, Garden State Parkway Widening Milepost 70 to 75 and many other projects.

While at NJDOT his later work included supervising the development of roadway design standards and the preparation of roadway design manual, review of current research from national agencies and the evaluation of new products for consideration as new standards.

Mr. Yacovino earned his B.S. in Civil Engineering Technology from the NJ Institute of Technology and is a PESMC Past President.



Dan Yacovino, P.E.

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U.S. Domestic Scan Teams Examine Program Management Delivery, Accelerated Construction and Winter Maintenance



Harry Capers, P.E.

Arora and Associates, P.C. has conducted the first three of fourteen scans selected under the NCHRP Project 20-68A the "US Domestic Scan Program". These scans are being conducted under the auspices of AASHTO, FHWA and NCHRP by teams comprised of representatives from various state agencies and the FHWA. Each scan team is being assisted by a subject matter expert in planning the scan and documenting its findings. A brief description of the three scans along with a short statement of findings follows:



Arun Shirolé, P.E.

Best Practices in Project Delivery Management. – Scan Coordinator – Arun Shirolé, P.E., Senior Vice President, Arora & Associates, P.C. - This scan was an investigation of organizational factors (e.g., degree of centralization or decentralization in agency management) that influence agencies' abilities to reliably deliver projects on time and within budget. Best practices were identified in the areas of project management structure, well developed

performance management, contracting procedures, community involvement and public accountability. At the conclusion of visits to seven agencies, the team was unanimous in its overall impression that each agency visited was performing a large number of project development and delivery activities very well and had a strong and stable foundation from which to launch new initiatives and adapt to changing conditions.

Best Practices in Accelerated Construction Techniques. Scan Coordinator – Narendra Khambhati, P.E. Senior Vice President, Arora & Associates, P.C. – This scan was a study of actual construction operations and management practices, rather than contractual or other incentives to develop and apply such practices. The most successful agencies recognize that accelerated construction is about minimizing time impacts to the public and the impact on overall cost. When goals are aligned and a partnering atmosphere is created, all team members view the accelerated work as an opportunity to demonstrate excellence. Accelerated construction requires much more up front planning. The DOT or Agency must



Narendra Khambhati, P.E

available materials and construction equipment before developing its design. Contractors seeking to accelerate their work must develop their plans to a much greater level of detail due to schedule constraints and overall contracting risk. Supportive teamwork and planning are a must and the designer must maintain flexibility in the design.

Best Practices in Winter Maintenance. – This scan looked at operating methods, equipment and materials that improve the efficiency and effectiveness of snow and ice control operations, considering local government as well as state DOT experience. Best Practices were observed in the use of Maintenance Decision Support Systems (MDSS), Automatic Vehicle Location Systems (AVL), and various Equipment Technologies such as the tow plow and the use of video cameras to expand the range of view of snowplow truck operators. Management Issues, such as inter-jurisdictional relationships, are important to promote consistency in levels of service between otherwise invisible governmental boundaries.

The Scan teams will present findings in the near future with full reports. Additional dissemination activities are expected to start by early winter 2009. For additional information on the program, contact Harry Capers, P.E. at hcapers@arorapc.com or visit:

<http://www.trb.org/TRBNet/ProjectDisplay.asp?ProjectID=1570>

Valeo Selected for S.A.M.E. Leadership Workshop



Meghann Valeo

Meghann Valeo was recently selected to represent the New Jersey Post, Society of American Military Engineers (SAME) at the Winter Post Leaders Workshop held in Los Angeles, CA on Feb 11-12, 2009. During the workshop, she had the opportunity to network with SAME leaders from across the country and learn about the strategic vision of the organization from the National Leadership in attendance.

Since joining SAME, Meghann has become actively involved with the New Jersey Post and was recently elected by the membership to be a Post Director. Her duties include Newsletter editor, Webmaster and Young Member Chairperson. For the second year in a row, Arora and Associates, P.C. supported the NJ Post's "Support the Troops" effort through donations of items to our deployed servicemen and women. Through the community's kind donations and generosity, the New Jersey Post sent a total of 91 boxes with a total of 1,802 lbs of supplies to military personnel located at 8 locations in Afghanistan and Iraq. Thank you for helping to make this program such a huge success!

ARORA in the LEED!

In the ever-evolving environmentally and economically conscious world in which we live, awareness, innovation and change are beginning to be a widely accepted given as we move into the future. In recent years, the everyday use of natural resources, conventional energy, the discharge of wastewater, and the emissions of greenhouse gases and other volatile organic compounds (VOC's) has come under much scrutiny for the proven adverse effect and strain they place on our natural environment. As stewards of our built environment, it's our duty to build and develop in a responsible and sustainable manner.

This year marks the 15th anniversary of the founding of the U.S. Green Building Council (USGBC). Over those 15 years, this nonprofit organization has made the commitment to provide a vision, education and guidelines for a sustainable future within our built environment. USGBC created The Leadership in Energy and Environmental Design (LEED) Green Building Rating System as a voluntary, consensus-based, national rating system for developing high-performance, sustainable buildings. This rating system promotes a whole-building and site approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site



development, water savings, energy efficiency, materials selection and indoor environmental quality.

LEED is the nationally recognized standard for sustainable design and professional awareness. Increasingly, we are seeing RFP's indicating the need for LEED Accredited Professionals to be an integral part of the design team to assist in providing innovation and sustainable design techniques. Arora and Associates, P.C., is now a part of the "LEED Movement". Timothy Paul Wilson, RLA of the Harrisburg office received the recognition of LEED AP in December of last year.

"The LEED System™" encourages and accelerates global adoption of sustainable

By Tim Willson, RLA, LEED AP

green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria." LEED principles not only raise the bar of sustainable design, they transcend professions. Architects, real estate professionals, facility managers, engineers, interior designers, landscape architects, construction managers, lenders and government officials all use LEED to help transform the built environment to sustainability.

The future depends on us!

For additional information, contact Tim Wilson, RLA, LEED AP at the Harrisburg, PA office.



Tim Wilson, RLA, LEED AP

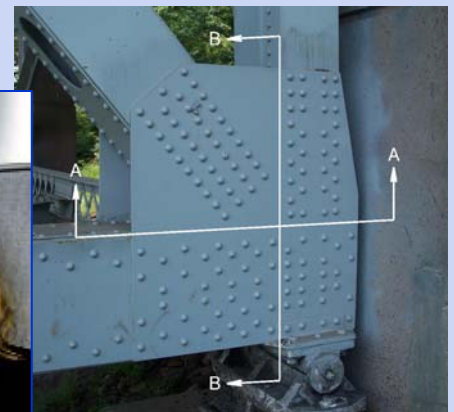
Glenn Deppert and Meghan Myers to Present on Gusset Plate Analysis at Three Conferences

Glenn Deppert, P.E., Arora's Bethlehem Office Manager, and **Meghan Myers**, of the Lawrenceville Office Structural Department, will be participating in the "Load Rating of Gusset Plates of Connections of Steel Truss Bridges" seminar, sponsored by FHWA, at the **26th Annual International Bridge Conference** in Pittsburgh, PA in June 2009. They will be presenting on the topic of using finite element analysis in load rating of gusset plates. Mr. Deppert will also be participating in the panel discussion following the seminar presentations.

Ms. Myers's paper on the screening and analysis of the Hawk Falls Bridge gusset plates has also been accepted for presentation and publication at the **5th New York City Bridge Conference** in August 2009 and at the **2009 World Steel Bridge Symposium**, which is being held in San Antonio, TX in November 2009.



Meghan Myers



Arora Completes Alexander Hamilton Bridge Access Ramp Rehabilitation by Integrating Design Offices Through Technology

Arora and Associates, P.C. under the direction of **Timothy Riordan, P.E.** recently integrated two of its offices to complete the rehabilitation design of the access ramps to and from the Alexander Hamilton Bridge on New York's Cross Bronx Expressway.

Unique to this project was the design and detailing of the temporary structures required to maintain traffic on the curved ramps throughout construction. Through their construction specifications, NYSDOT normally places the responsibility for the design of temporary structures upon the contractor who can then select the methods and materials most beneficial to successfully deliver the project. However, the magnitude, complexity and uniqueness of the temporary structures required to maintain traffic on the Alexander Hamilton Bridge prompted NYSDOT to have Arora provide complete design and detailing of the structures in the bid documents, thereby providing contractors a set design to base their bids upon.

The schedule of this work necessitated that it be accomplished in a relatively short period of time. To meet the demand's of the projects technical challenges compounded by the aggressive schedule, Arora's New York office enlisted assistance from the New Jersey office and electronically integrated those physically distant personnel into one seamless design team. Arora's Multiple Protocol Label Switching Virtual Private Network (MPLS VPN) enabled remote employees to work on New York's servers while maintaining the integrity and



Timothy Riordan, P.E.

security of all project files. This also assured that all employees were utilizing the latest files, eliminating the possibility of different versions of files being used on different servers.

Weekly progress and impromptu meetings to discuss design issues, employed web-based meeting tools with teleconferencing, eliminating costly and time consuming travel and the logistics issues. This enabled engineers at multiple locations to review and discuss the same material, while simultaneously having the ability to point to and mark up the sketches and drawings online.

This web-based meeting method, proved beneficial internally, and was also advantageously employed externally. When there was a need to "meet" with a temporary bridge component provider's engineers in Pennsylvania or NYSDOT's Geotechnical group in Albany, NY,

Arora's engineers did so from their desks in New York and New Jersey. The web-based meeting tools allowed everyone to discuss issues as if they were seated in the same room together with drawings on the table in front of them.

In addition to cost and travel time savings, scheduling of meetings among multiple participants was expedited because only actual meeting time was required, enabling earlier discussion and resolution of project issues and aiding in the maintenance of the critical project schedule.

The proven success of this electronic integration has advanced Arora's ability and flexibility to meet project schedules, and to seamlessly and cost effectively avail all projects and clients of the technical expertise within the company.

Choksi Puts His Skills to Work for the Community

Yagnesh Choksi, a Geotechnical Engineer in Lawrenceville, was re-nominated as Environment Advisory Board Member in the Bensalem Township, PA for a second four year term. Yagnesh was also recently elected as a School Board Director in the Bensalem Township School District for the 2010-2014 term. We wish him good luck in this new endeavor.



NOT TO SCALE

The Market Street Feasibility study in the Borough of Jonestown is an example of how a simple concept drawing can be brought to life by using a bit of human touch. This hand rendering of an intersection added an extra dimension of clarity and was well received.



Hand Rendering Helps the Public Visualize Design Options

Sometimes a graphic presentation can make or break the public's opinion of a project. As a professional design firm, it is our duty to convey project information to the general public and clients in a way that they can interpret and understand the thoughts and concepts within a project. This understanding makes it easier for the target audience to provide comments and feedback rather than questions.

It is our experience that hand rendered presentation graphics generate a better response and dialog between the consultant, clients and public. Hand rendered graphics have a warm inviting feeling. They can appear "homemade" and human compared to computer generated graphics, which can feel sterile and distant. People tend to relate to and appreciate the work that went into creat-

ing the graphic by hand. There are also techniques to combine hand rendered graphics and computer generated graphics to achieve the same effect. Arora and Associates, P.C. strives to produce a top notch deliverable with every project and has the capabilities to generate the graphic presentations necessary to take a project to the next level.



This rendering was used to show a landowner along the Chester Valley Trail project how the trail would look using a barrier wall at the entrance of the property along Chesterbrook Boulevard. The three dimensional sketch helped the property owner visualize the trail construction and resulted in a quick resolution to a complicated trail design issue.



Over 25 Years of Excellence!

MISSION STATEMENT

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Arora and Associates, P.C. is a team of dedicated professionals providing quality engineering services to improve the infrastructure and to meet clients' goals in a cost effective manner utilizing state-of-the-art technology. Arora and Associates, P.C. will uphold these principles to ensure a bright future ahead.

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Quarterly Newsletter

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