

Introducing New Key Harrisburg Employees

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John Burkhardt brings over 35 years of experience in the transportation and building industry to Arora. He got his start as Special Assistant to the Secretary of the Pennsylvania Department of Highways in Harrisburg. Later, he served as Deputy Executive Vice President of The American Road & Transportation Builder's Association in Washington, DC. He has worked for planning and design firms including TAMS, STV, Urban Engineers and, most recently, The RBA Group. John is a native of Bethlehem, PA, graduated from Dartmouth College in Hanover, NH and served in The U.S. Army Security Agency in



John Burkhardt

Germany. John and his wife Beverly live in East Coventry Township, Chester County, PA. They have two children and three grandchildren. Contact John at jburkhardt@arorapc.com.

Bill Forrey, RLA brings park and greenway design experience to Arora. He is a Landscape Architect by education and has a Master of Regional Planning. Bill has more than 35 years of experience in the park planning and engineering field. He is a specialist at park, recreation and rail-trail



Bill Forrey, RLA

projects. In addition to working directly with most of Pennsylvania's Commonwealth agencies, he has also worked for private consultants. He has had the opportunity to be involved with many "fun" projects including the Camelback Ski Resort in PA. Bill served as the Director of State Parks for the Pennsylvania Department of Environmental Resources for 19 years. He also serves on the Cumberland County Greenways Task Force. Bill and his wife live in Camp Hill and have three daughters and one son. Contact Bill at wforrey@arorapc.com.

Timothy DeWire, P.E., AICP graduated from the Pennsylvania State University with a BS in Civil

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Bridges of Central Park, New York City

By Satinder P. S. Puri, P.E.

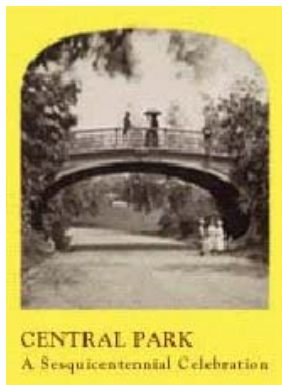
In June 2003, while visiting the Metropolitan Museum of Art, I saw a poster of a bridge with the caption: CENTRAL PARK – A Sesquicentennial Celebration. My immediate reaction was "Wow! an exhibition on bridges." The word "Sesquicentennial" sounded more like something to do with the Susquehanna river the thought of which conjured up images of more bridges. To my surprise I learned that the MMA

had organized an exhibition in celebration of the 150th anniversary of the legislation (July 21, 1853) that designated as "a public place" the lands that were to become New York's Central Park. The exhibition was about the design and construction of Central Park in which the museum is located.

The exhibition inspired me to work on a presentation on the Bridges of Central Park. The book by Henry Hope Reed, Robert M. McGee, and Esther Mipaas was used as a reference. While I

had a copy, the entire book on the Bridges of Central Park can be downloaded from the Greensward Foundation website at www.greensward.org. A number of trips, spread over six months, were made to Central Park to look at all the bridges. Each trip was an adventure and no two bridges looked alike. The first presentation was made on November 18, 2003, as part of the Public Program series organized by The New York Public Library's Science Industry Business Library. Ad-

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Metropolitan Museum of Art Poster Showing the Spur Rock Arch - a Cast Iron Pedestrian Bridge which was demolished in the 1930s

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Timothy DeWire, P.E.

Engineering in 1991. He has over eleven years of experience in civil and environmental engineering, planning, and project management. Tim started building his experience by working with the U.S. Army Corps of Engineers in Philadelphia. There he gained valuable experience dealing with many state and regional resource agencies. He has managed and been part of several complex projects that have addressed ecosystem restoration, flood control, storm damage reduction, streambed and shoreline stabilization, and watershed management needs. Tim's personal interests

are natural resource conservation and restoration, outdoor recreation and historic preservation, affording him the opportunity of joining interest and career. Tim and his wife are the proud parents of a bouncing 10 month old son. They live in Mechanicsburg. Contact Tim at tdewire@arorapc.com.

J. Dixon Earley, P.E. brings more than 30 years of Pennsylvania state government experience to Arora and



J. Dixon Earley, P.E. Associates. Dixon graduated from Lehigh University and gained valuable design experience with the Bridge Unit at PENNDOT's Harrisburg District. He worked as a

design engineer as well as supervised the construction of structures for PENNDOT and eventually ended in charge of the District 8-0 Bridge Unit in Harrisburg. Dixon was also the Chief Engineer for the PA Department of Environmental Resources. As such, Dixon oversaw abandoned mine reclamation projects, dam and waterway management projects, flood control projects as well as hazardous site cleanup projects. Dixon's oversight included design projects as well as the construction of these projects. Dixon and his wife live in Camp Hill, PA. Contact Dixon at dearley@arorapc.com.

Cindy Case, previously a part-time employee of Arora, has now been hired as a full time administrative assistant in the Harrisburg office. Cindy is a graduate of the US Coast Guard Academy in New London,

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ALSO, THE BRIDGE IS OUT AHEAD

2003 Holiday Party

This year's Holiday Party was held at the Ramada Inn in Hightstown and attendance was great! A "lively" social hour, followed by a fabulous buffet dinner then the annual drawing for many door prizes was a huge success. After dinner music was provided by Shan Production (Sachdeep Arora) and it was rumored that engineers were seen dancing (at least trying)!

Reservations for the next Holiday Party have already been made at the same place for December 11, 2004.

Meet the New Faces in Lawrenceville



Thomas Sweeney, P.E.

Thomas Sweeney, P.E. He has over 23 years of experience in the management, design and inspection of highway and railroad bridges. These projects include serving as Project Manager for several NJ Turnpike Authority projects including the Secaucus Interchange project, Secaucus, Hudson County; Eastbound Deceleration Lane Widening, East Viaduct and Grand Street Ramp, Jersey City, Hudson County and Specialized Structural Repairs to Newark Bay Bridge and Western Hackensack River Bridge, as well as others.

He holds a BSCE from Lehigh University and is a PE in NJ and NY. He will be working closely with Narendra and will be getting assignments from the Highway and Structures departments as well as the Marketing department. Contact Tom at tsweeney@arorapc.com.

James L. Kochenour, P.E., P.P. joined Arora in

December 2003 as Senior Traffic Engineer. Jim has been a transportation engineering professional since 1970. He worked for the NJ Department of Transportation for 15 years, including the supervision of a traffic engineering section. In 1985 he became a principal in a firm specializing in traf-



James L. Kochenour, P.E., P.P.

fic impact studies preparation, traffic signal and intersection design; site plan development for traffic considerations; land condemnation matters from a traffic engineering perspective and expert testimony. He is recognized as an expert in traffic engineering and has testified before planning

and zoning boards/ commissions in New Jersey and Pennsylvania, as well as the New Jersey Superior Court system.

He holds a Bachelor of Science in Civil Engineering and a Master of Science in Civil Engineer, both from Drexel University in Philadelphia. Jim is a registered Professional Engineer in New Jersey and Pennsylvania, and a Professional Planner in New Jersey.

He had worked with us previously on such projects as Route 71 and Wall Street Intersection and Route 27 at Oak Tree Road, Auth Avenue and Green Street. Since joining Arora, he has been assigned as Traffic Engineer for Arora's projects as well as various municipal projects in the area. Contact Jim at jko-chenour@arorapc.com.

John R. (Jack) Christian Jack retired from NJDOT in 2002 after 36 years in the Division of Right of

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Cindy Case

CT. She served in the Coast Guard for five years before leaving to start a family. Her Coast Guard experience includes anti-submarine warfare officer on a ship, intelligence officer at the drug enforcement center in Miami and administrative

coordinator for Coast Guard personnel in Hawaii and the Pacific area of operations. Cindy is acting as the receptionist for the Harrisburg office as well as assisting with marketing tasks. Cindy has been integral part in putting out many of the proposals that have been submitted by the

Harrisburg office. Contact Cindy at cjcase@arorapc.com

Meet the New Faces in Lawrenceville

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Way. He held various positions in the Title Bureau, retiring as Bureau Manager (1991-2002.) While Manager of the Title Bureau, he was responsible for the final payment of all right of way acquisitions required by the Capital Program.

At various times, he also assisted the NJDEP and NJ Transit in their acquisition process.

He was the State's lone expert witness in a major

land fraud trial, which resulted in a conviction of the use of "wild deeds."



John R. (Jack) Christian

He has received awards as Team Leader for a team project receiving a

NJQI-AASHTO national award; Value Engineering Team Study and the State Suggestion Program.

He has volunteered with the Credit Union of New Jersey (formerly NJDOT Credit Union) since 1968 and is currently serving as a member of the Board of Directors. Contact Jack at jchristian@arorapc.com.

Schedule of Events

4/30 – ASCE NJ Section Annual Awards Dinner.

6/26 – Annual company picnic. Picnic will be held at Mercer County Park at Valley Road in Mercer. Picnic starts at 10:00 AM and goes 'til sunset. All employees are invited...Bring your families.

Bridges of Central Park, New York City

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ditional presentations have been scheduled for the ASCE Met Section Structures group and the ASCE Student chapter at Case Western Reserve University, Cleveland, Ohio.

In 2003, New Yorkers celebrated with fanfare the 150th anniversary of the act passed by the New York Legislature on designating land in Manhattan for a public park. The act stated: *"All that piece or parcel of land situate, laying, and being in the twelfth, nineteenth, and twenty-second wards of the city of New York, bounded southerly by Fifty-ninth street, northerly by One Hundred and Sixth-street, easterly by Fifth-avenue, and westerly by Eighth-avenue, is hereby declared to be a public place."* In 1863,

the park was extended north to 110th street.

It took three years (1853-1856) and over \$5 million to acquire the land. In 1857, a public competition was sponsored to design Central Park. Out of the 33 entries, the "Greensward Plan" by Frederick Law Olmsted, Park superintendent, and Calvert Vaux, a British landscape architect, was selected. Calvert Vaux also designed the original bridges. Construction started in 1857 and was completed twenty years later. The construction cost was nearly \$11 million which in today's terms would be over \$500 million.

The 843-acre Central Park which receives over 25 million people each year contains lakes, lawns, meadows, woodlands, 58 miles of pedes-

trian paths, 4.25 miles of bridle paths, 26,000 trees, and also roads. The entire park is a man-made landscape.

A network of roads (called drives) was built for horse-drawn carriages. Four depressed cross-streets, like bath-tubs, exist at 66th, 79th, 85th, and 97th streets, and permit cross-town traffic. At overpasses where the park roads cross these streets, dense vegetation has been planted to reduce the noise pollution from cross-town traffic.

Central Park, at present, has 44 bridges mostly for the use of pedestrians, joggers, bicyclists, skaters, dog-walkers, and horse-riders. Some bridges also provide access for horse-drawn carriages and motorists. Following the practice in

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A Rock Slab Pedestrian Bridge

Who's Buried in Grant's Tomb?

"The purpose of the Memorial is a mausoleum housing the remains of President..."



Arora recently received an assignment from the Manhattan Borough President's Office to review a City Map change which delineates two permanent easements for the United States National Park Service. The easements will facilitate improvements and modifications to the General Grant National Memorial, or "Grant's Tomb".

Grant's Tomb is a United States Federal property, located in Riverside Park, between Riverside Drive East and Riverside Drive West, at West 122nd Street—a short walk from Columbia University. The purpose of the Memorial is a mausoleum housing the remains of President Ulysses S. Grant and his wife, Julia Dent Grant. A high degree of decorum and solemnity is expected within the tomb. The National Park Service requires two permanent easements in order to release Federal grant monies for improvements within the two easement

areas which lie within New York City owned land. The first easement is located contiguous to Grant's Tomb around an existing public plaza. The second easement is located west of Grant's Tomb across Riverside Drive West. This area consists of an overlook pavilion, public rest rooms and sidewalks. The pavilion is visible to motorists from Henry Hudson Parkway and Riverside Drive. Once the easements are granted by the City of New York, the National Park Service will be authorized to construct and maintain improvements to enhance the public use and enjoyment of Grant's Tomb.

The General Grant National Memorial was dedicated to the City of New York in 1897. The memorial was transferred into Federal Ownership in 1956. Management was transferred to the National Park Service in 1959 by Public Law 85-659. A Final General Management Plan was

prepared for the Memorial in 1996. The Plan provided for Grant's Tomb and the surrounding site to be preserved, and for the construction of a new visitor and information center at the overlook pavilion. The Plan provides an enhanced setting and interpretation of Grant's Tomb as a national memorial.

The improvements to Grant's Tomb were the subject of an environmental review by the National Park Service and prepared in accordance with the National Environmental Policy Act (NEPA). A General Management Plan/Draft Environmental Impact Statement (EIS) was published in April 1996. The Final General Management Plan Environmental Impact Statement (FEIS) was published in September 1996. A NEPA Record of Decision was issued in October 1997. The proposed program for Grant's Tomb is based on the results of this process.

Bridges of Central Park, New York City

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the reference, overpasses over the four cross-streets and bridges in the children's playgrounds were not included in the presentation.

There is one rock pile bridge, four rock slab bridges, twelve girder bridges, and twenty-seven arch bridges.

These bridges use a variety of structural materials—stone, brick, wood, plain concrete, cast iron, wrought iron, structural steel, and reinforced concrete.

The reference does not mention either the rock pile bridge or the four rock slab bridges.

The bridges function as

highway bridges with pedestrian sidewalks, as pedestrian bridges over streams and lakes, and as pedestrian bridges over bridle paths. Most of the highway bridges are underpasses that permit pedestrians or horse-riders to use the park without being disturbed by the noise from the cars on the drives.

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"Central Park, at present, has 44 bridges mostly for the use of ..."

Spotlight On...

Congratulations go out to **Mandeep S. Arora, P.E.** who has been named the 2004 Young Engineer of the Year by the Professional Engineers Society of Mercer County. The dinner is to be held on February 28, 2004 at the Trenton Country Club.

Mandeep graduated from NJIT with a BS in Civil Engineering in January 1995 and completed a Mini-MBA from Rutgers University in 2003. He

received his NJ PE license in August 2001.

Mandeep serves as Deputy Department Manager and Deputy Project Manager under Dan Yacovino in the Highway Design Group. Mandeep has been involved with Rt. U.S. 1 Pedestrian Bridge, Rt. 40 over Elmer Lake, Rt. 73/ Fox Meadow Rd., and Rt. 9 over Forked River, the Hartford Road Bridge, Texas Road Bridge, Scotch Road over

Route I-95 interchange, and the South Jersey Light Rail Project.

Outside of work, he has been a volunteer with the annual Mathcounts competition, coordinator of the PESMC Bowling Outing and the coordinator for the PESMC Golf Outing and the Gary Case Memorial Golf Outing. He is also very active in the Sikh religious/social organization in Lawrenceville.



Mandeep Singh Arora, P.E.

Spotlight On...

Michael Wright, P.E., Vice President, is our first manager certified by the Project Management Institute as a Project Management Professional. The qualifications to become certified are a BS degree, 4,500 hours of project management experience within three of last six years, 35 contact hours of PM education and passing PMI's examination.



Michael Wright, P.E., P.P., P.M.P.

Bridges of Central Park, New York City

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Three cast iron bridges were demolished in the 1930s to make way for improvements in the park.

Some wooden bridges were replaced with stone bridges which have proved to be more durable.

Deteriorated bridge components (deck, framing, and railings) have been rehabilitated. The new railings match the looks of the existing railings in most cases.

The focus of the presentation was on how the

architecture of the bridges added to the visual experience in the park and how the bridges inspired artists to use them as subjects for their paintings.

The bridges present different perspectives when seen -- from above or below, during different times of the day under varying light and shadows, and during different seasons of the year.

Most bridges have decorative features on the parapets, railings, facades, and underpasses.

Ornamental stone is used for the parapets and cast

iron for the railings. Rustic railings are used for wooden bridges. The facades use either stone or a mix of stone and high-quality bricks. The soffits of the underpasses also use high quality bricks. The stones and bricks are arranged in eye-appealing patterns.

The interaction between the parapets/railings, the facades, and the soffits of the bridges provides an experience that complements the visual experience with the natural surroundings.

Plan to visit the Bridges of Central Park on your next trip to Manhattan.



Stone Arch Pedestrian Bridge. It replaced an earlier wooden bridge.

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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TEAMWORK

The Quarterly Newsletter