

# Insights

FACING CHALLENGES FINDING SOLUTIONS



## Preventing and Solving Concrete Problems

### Announcing the Formation of the D&B Concrete Team

Maintaining high quality concrete construction has been a challenge for engineers, contractors and owners. Professional organizations representing contractors and engineers have performed research, provided guidance and established criteria for concrete designs and guideline specifications. Despite this effort, many construction projects will experience difficulties with concrete quality. Anyone who has been involved in concrete construction is aware of the issues and questions that always arise with the use of admixtures, cracking, large flat pours, wet curing, hot and cold weather placement, water tightness, construction and expansion joints, shrinkage, design mixes, test cylinder preparation and storage, bonding compounds, wearing surfaces, when to consider prestressed concrete and many other issues.

D&B recognizes this problem and has formed a consortium of concrete specialists to provide technical guidance designed to avoid, and when necessary, analyze, solve and repair concrete failures.

The Team has been organized by Dvirka and Bartilucci Consulting Engineers (D&B) who will serve as the prime consultant. D&B has been a leader in concrete design and construction for the past 46 years and has been responsible for specifying hundreds of thousands of yards of concrete on water, wastewater and civil engineering projects. The full Team includes assistance from the most prestigious concrete laboratory and concrete specialists who have impeccable and unchallenged eminence in the concrete field. These experts will serve clients as employees of D&B.



The D&B Concrete Team is offering this service to our existing clients where we have new and ongoing projects, as well as new clients that may need advice on specific concrete related situations.

A major element of many capital improvement projects involves the successful monitoring of concrete installations. As noted previously and in an effort to provide our clients with the best possible services on construction management projects, D&B has formed a collaborative alliance with Municipal Testing Lab (MTL). MTL is a recognized leader in the fields of concrete quality assurance materials testing and laboratory services. This will be combined with D&B's extensive experience on both design and construction inspection projects to provide a team that can successfully manage any contingency arising in the field associated with facility and infrastructure efforts.

## Summer 2011

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### D&B ENGINEERS AND ARCHITECTS, P.C.

- Wastewater Management
- Water Supply Treatment and Distribution
- Recreational Facilities
- Roads and Storm Water Management
- Solid Waste Management & Recycling
- Construction Management
- Hazardous Waste Site and Brownfield Remediation
- Multimedia Environmental Compliance
- Phase I/II Site Assessments
- Environmental Assessments and Permitting
- Manufactured Gas Plant Site Remediation
- Cellular Communications Site Design
- Architectural and Building Improvements
- Hazardous Materials Assessments

Currently, in collaboration with MTL, D&B has performed an extensive qualification initiative involving American Concrete Institute (ACI) certifications for all of our key field staff. MTL is the only ACI certification testing facility on the East Coast and they have been conducting training classes for our staff. This additional education and certification process has raised the bar of our staff's inspection coverage and increase the value of services to our clients. Additionally, these efforts will facilitate overall project quality assurance, cost effectiveness and facilitate minimizing delays in the projects' schedule.

To further support this initiative, D&B is working closely with recognized leaders in the field of concrete quality assurance and materials testing. In support of this effort, we will be relying on the assistance of Kal Hindo, P.E., an ACI Fellow. Mr. Hindo is a recognized national expert associated with concrete and materials. He has been involved in numerous forensic analyses and evaluations and prepared reports and conducted studies on strength and durability issues of concrete. Mr. Hindo has worked on quality assurance issues in several cities through out the US and abroad. This includes NYC. For seven years he was the Concrete Technologist for a JV Team on the NYCDEP Concrete Quality Assurance Project. Other nationally renowned experts in concrete and materials available to the team include Dr. Mohan Mahotra, Dr. George Hoff and Dr. Terrance Holland. Additionally, all of these gentlemen are ACI fellows and two are past ACI National Presidents. Each has chaired numerous important ACI and ASTM committees.

All of these individuals supported Mr. Hindo's effort on the NYCDEP Concrete Quality Assurance Program as members of the (TAC) Committee. This group assisted the NYCDEP with revising and updating the overall DEP Concrete Quality Assurance Program. Their accomplishments included the introduction of advanced supplemental cementitious materials and the latest proven admixtures. These two changes provided improved quality control and cost efficiencies. Other examples include, revisions to old concrete specification (Spec 11) and developed the present 03300 Specifications. They also produced numerous white papers, on such issues as the use of 4" x 8" cylinders instead of 6" x 12", and evaluated the beneficial use of epoxy coated reinforcing. The group introduced the latest state of the art non-destructive testing techniques and most notably they implemented the use of adiabatic heat signature testing for mass concrete. Under Mr. Hindo's and the TAC direction, they revised many of the old design mixes and formulated new mixes that were more proficient producing consistent results at lower cost. Also, they established the use of statistical analyses of concrete results as a basis of quality assurance using ACI 214 methods.

Other examples of the contribution of the Technologist's team was the establishment of protocols for: 1) batch plant inspection, 2) site inspection, 3) rejection criteria, 4) lab testing, and 5) pre-cast plant inspection.

These increased capabilities by D&B will allow our clients to realize added value on their projects. This state of the art training and augmented expertise through Mr. Hindo and the TAC team will facilitate success on both design and field projects that we are involved with. At D&B, we take our responsibilities to our clients seriously and to us, there is no greater satisfaction than a safe project delivered on time and within budget with the highest standards of professionalism. **db**



## The D&B Team Awarded Two Major DEP Contracts

D&B Engineers and Architects, P.C. (D&B) is pleased to announce that after a comprehensive and competitive selection process, the New York City Department of Environmental Protection (NYCDEP) recently awarded D&B the following two contracts:



### **CONTRACT 1: CTYWDCM-3A, B, C & D - Construction Management Services in connection with Miscellaneous Projects in the Downstate Area**

NYCDEP awarded this \$6 million contract to D&B to provide the Department with construction management services, as requested, for a variety of capital improvements at DEP facilities. The construction projects that may be assigned to the CM will be mostly Task Order Contracts (TOCs) from the operating Bureaus: Bureau of Wastewater Treatment (BWT), Bureau of Water and Sewer Operations (BWSO), and Bureau of Water Supply (BWS). The anticipated project term will be 36 months, with the option to

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renew, if needed. **Our manpower, on-call experience, management structure, communication techniques and rapid response are key strengths.**

Our mission statement to the NYCDEP was that **“The D&B Team remains steadfast in aggressively assisting NYCDEP to meet its goal to deliver the highest quality capital program in the U.S. We will manage assignments to meet budget and schedule. By employing a pro-active stance in QA/QC and EH&S programs, the Team’s directive is to anticipate problems and find cost-effective solutions, while ensuring site safety and environmental compliance. Zero accidents and everyone goes home safely at the end of the day is our commitment to the NYCDEP.”** We intend to abide by our statement and transfer our continued success with the NYCDEP to this Downstate project.

### **CONTRACT 2: PW-072 - Construction Management Services in Connection with Miscellaneous Projects at Various BWT Locations**

D&B was selected out of a field of 8 consulting firms on this significant \$3 million contract. This contract involves providing NYCDEP On-call CM services to BWT for: Hundreds of Job Order Contracts (JOCs); Discrete Stand-Alone capital projects that require on site presence on a continuing basis; and have staff available on demand within hours of request. Job Order CM has traditionally been handled in-house at BWT, and the sheer number of these contracts makes this a unique and challenging assignment. This work could include improvements at 14 WPCP, 90 pumping stations, CSO storage and in stream aeration and support services. Assignments will include addressing needs of the BWT program such as: inspection and QA services; tracking and recommending recovery to schedules; oversight on EH&S and other critical special issues; hazardous waste identification, material handling and disposal; critical oversight; permit identification and tracking; and project control metrics including reports, cost and schedule metrics.



Having excelled in On-Call CM services for NYCDEP for decades under numerous projects, our seasoned construction management team will continue our track record with the NYCDEP to be “responsive” and “responsible” maintaining excellent client satisfaction. The anticipated term of this contract will be 24 months with an optional 1 year renewal. **db**

## **D&B Working with Long Island Water Suppliers to Address Water Quality Issues**

D&B has been working with several water suppliers on Long Island to address water quality issues from drinking water supply wells. Groundwater aquifers in Nassau and Suffolk Counties provide the sole source of water to these suppliers. The water drawn from these aquifers often must be treated to meet the stringent standards of the New York State Department of Health. D&B is currently engaged in the design and construction of several water supply and treatment facilities throughout Nassau County.

The facilities currently under design and construction include new wells, volatile organic contaminant (VOC) removal, iron and manganese removal, nitrate removal and chemical handling. VOC treatment systems include both packed tower aeration as well as granular activated carbon (GAC) filtration systems. Filtration systems for iron removal include provisions for recycling backwash waste and for dewatering iron sludge. Ion exchange is being used for nitrate removal. Sodium hydroxide (caustic soda) or lime slurry is used for pH adjustment to control corrosion in the distribution system. Liquid sodium hypochlorite or dry tablet calcium hypochlorite is used for disinfection. D&B provides all aspects of design, permitting, bidding assistance and construction services for these groundwater supply and treatment facilities. **db**



### **Ion Exchange for Nitrate Removal in Two LI Water Supply Systems**

D&B has been working on the design of two new Nitrate Removal Facilities on Long Island. Both systems will be based on the Layne Christensen Company Advanced Amberpack Ion Exchange System. This system uses a series of packed bed pressure vessels which can be regenerated on site using a brine solution. Pilot testing was performed at both sites to verify the effectiveness of the technology for the water quality from each well.

The construction of the 4.0 MGD treatment system for the Town of Hempstead Department of Water’s Roosevelt Field Wells 11 and 12 will commence in the Summer of 2011. The detailed design of a 1.7 MGD system for the Port Washington Water District is currently underway with construction anticipated for early Spring 2012. **db**

## Tunnels, the Future of the City

New York City is alive with underground construction activity. A vital component of the City's long term infrastructure developed is tunnels. Out of sight, out of mind, but nothing could be further from the truth. The Tunnel construction is underway and when complete, will substantially improve the City's ability to provide important services to its residents. The ongoing tunnel construction in New York City has many different components, including rail tunnels, sewage, CSO, and water conveyance systems. One of the City's most important infrastructure projects over the last several decades is the NYCDEP 3rd Water Tunnel Project. When fully completed, this tunnel will bring hundreds of thousands of gallons of water a day from the upstate watershed region to New York City.

D&B is well positioned to support these major tunneling projects with environmental, structural, and construction management services. Our staff is well versed and experienced working with city agencies such as the NYCDEP. We are working in concert with other firms to provide our clients with the complete package of services to successfully deliver tunneling and support projects on time and within budget. **db**

## New Hires



### Michael E. Urtnowski

D&B is pleased to announce that Michael Urtnowski has joined the firm as Vice President of Business Development and Marketing. Michael has over 30 years of diversified experience in directing the business development and client liaison efforts of major national and New York regional engineering firms. He has

been in charge of new business development efforts in the following disciplines: environmental, transportation/civil and facility infrastructure. These efforts have included some of the region's largest projects, including water/wastewater, tunnels, roads and bridges, higher education facilities, hospitals, airports, and military installations. Earlier in his career in the 1980s, he was Director of Marketing for a LI firm where he managed business development activities focusing on transportation, environmental and construction management projects. For many years he was based in NYC as a Vice President of Marketing for two national firms. He directed marketing efforts in NYC focusing on clients such as the NYCDEP, PANYNJ, MTA, DASNY, NYSDOT and many others. Most recently, Michael has provided focused business development and client liaison services for other regional A/E firms servicing local clients in New York City and the Tri-State area. Michael will be based out of our Woodbury, NY, office and can be contacted at (516) 364-9890 x3011 or [murtnowski@db-eng.com](mailto:murtnowski@db-eng.com).



### John Schreck, P.E.

D&B is pleased to announce that John Schreck has joined the firm. Mr. Schreck has over 18 years of diversified design and construction management experience in civil, environmental, transportation and highway engineering disciplines. Mr. Schreck is a licensed professional engineer in the States of New York and Florida. Mr.

Schreck has extensive experience in the design and construction management of roadway and stormwater improvement projects for municipal and private clients in the Tri-State area. Mr. Schreck is thoroughly familiar with Locally Administrated Federal Aid projects and he has assisted numerous clients in obtaining funding and ensuring that these projects remained eligible for reimbursement throughout their duration. He is also highly experienced in the New York State Department of Environmental Conservation SPDES "Stormwater Phase II" regulatory permit requirements for activities associated with stormwater discharges. He has recently assisted clients in complying with these requirements by preparing numerous Storm Water Pollution Prevention Plans, Notice of Intent, and construction plans and specifications. Mr. Schreck will apply his diverse range of experience to strengthen D&B's already talented team of civil/highway/stormwater engineers. John is based out of our Woodbury, NY, office and can be contacted at (516) 364-9890 x3414 or [jschreck@db-eng.com](mailto:jschreck@db-eng.com).



### Paul A. DeBiase, CIH, CSP

D&B is pleased to announce that Paul DeBiase has joined the firm as Certified Industrial Hygienist/Certified Safety Professional. Most recently, he served as a safety and industrial hygiene field representative for Federal environmental restoration projects. In his career, he has gathered a vast wealth of knowledge related to

identifying, recognizing and monitoring environmental health and safety (EH&S) issues, including those associated with all types of construction and demolition at facilities that include schools, water districts, wastewater districts, fire districts, bridges, tunnels and nuclear reactors. He has served numerous public and private sector clients and trained technical specialists in a variety of environmental fields, such as hazardous communication and confined spaces. His experience includes projects involving industrial hygiene, asbestos, lead, indoor air quality, heavy metals, mold, noise, and potable water analysis. In addition, Paul DeBiase is an active member of the Metropolitan New York Chapter of the American Industrial Hygiene Association (AIHA), which included serving as an officer of the chapter (as secretary) for nine years. Paul is based out of our Woodbury, NY, office and can be contacted at (516) 364-9890 x3062 or [pdebiase@db-eng.com](mailto:pdebiase@db-eng.com).

## Message From The President



Henry J. Chlupsa, P.E.  
President

To our clients:

Thank you for your loyalty and support. Think of D&B for all of your engineering and architectural needs. We look forward to serving you and becoming your trusted consultant for generations into the future.

D&B is embarking on some new ventures. Our lead article describes our “D&B Concrete Team” and what we can offer our clients related to avoiding and troubleshooting concrete difficulties. In addition, as a result of the expanded services we are providing to our clients, we now have a full-time Senior Construction Scheduler familiar with all accepted CPM software packages related to analyzing engineering and construction schedules. With this hire, we will be able to develop recovery schedules and analyze the reasons for construction delays, as well as develop claims assistance services. Our intention is to grow this group as a great benefit to our expanding construction management services.

D&B's success is the result of unselfish teamwork between our staff to put the client's needs first and do the best and most cost-effective job possible for our clients. **db**



## Implementing Sustainable Business Practices at D&B



Sustainability is a hot environmental topic, though not everyone is in agreement as to exactly what it means. The United States Environmental Protection Agency (USEPA) has created a Sustainability Program under the Office of Research and Development. The agency notes that “sustainability” implies implementing policies and strategies that take into account the needs of future generations as well as present needs. The USEPA sees its role as evolving from strictly being the “environmental watchdog,” focused on curbing pollution through enforcement of regulations into a role more focused on promoting pollution prevention and utilization of advancements in science and technology to reduce use of resources and energy. More and more companies are joining in and finding ways to fit sustainable practices into their day-to-day businesses. Over the last 5 years, D&B has developed and implemented a sustainability program that includes numerous in-house pollution prevention initiatives, such as installation of energy efficient lighting and use of 30% post-consumer recycled content paper. D&B has also incorporated sustainability concepts in many of its work practices.

Currently, the firm is in the process of incorporating “green” remediation practices into the technical support that the firm provides to the New York State Department of Environmental Conservation (NYSDEC) with regard to site investigation, remedy selection, remedial design, remedial construction and site management/performance monitoring at contaminated sites included in NYSDEC’s remedial programs. D&B’s “green” remediation approach is consistent with guidance document “DER-31, Green Remediation,” dated August 11, 2010. The approach

includes consideration of the environmental effects of remedy implementation and incorporates options designed to maximize the net environmental benefit of the cleanup actions. D&B also provides periodic training for its staff regarding implementation of “green” remediation practices including in-house seminars presented by vendors on the technology forefront and webinars hosted by government agencies promulgating regulations requiring evaluation of “green” approaches. D&B has also formed a committee that meets periodically to discuss implementation of new “green” concepts into standard specifications, update checklists for staff to use for deliverables to ensure “green” concepts have been incorporated and identify “green” remediation firms that could provide presentations on their “green” concepts.

D&B is currently completing the design phase for the demolition and reconstruction of a NYSDEC 6 NYCRR Part 360/373 Permitted nonhazardous and hazardous waste treatment, storage and disposal facility on Long Island in New York State. The project is being designed to pursue a Leadership in Energy and Environmental Design (LEED) Silver Certification. LEED is an internationally recognized “green” building certification system designed to improve building performance related to energy savings, water efficiency, CO<sub>2</sub> emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. The “green” initiatives incorporated by D&B into this project include the use of water efficient landscaping to eliminate the need for an automatic irrigation system, preferred parking for car pooling and low emitting/fuel efficient vehicles, installation of bike racks and shower facilities to promote commuting to work via bicycle, use of low flow plumbing fixtures, use of low emitting building products made with recycled materials, limited comfort heating and no cooling in storage areas for energy savings, installation of a precast concrete panel building with high insulating properties, diversion of construction waste and promoting the use of regional materials. **db**

## 2011 Engineer of the Year

Henry J. Chlupsa, P.E., President of Dvirka and Bartilucci Consulting Engineers, was named the 2011 Engineer of the Year by the Westchester/Putnam Chapter of the NYSPE Society on Saturday, February 26, 2011. He also received the New York State PE Society Engineer of the Year on June 10, 2011 at the NYSPE Society annual meeting in Rochester, NY.

The picture above is of Henry receiving the Engineer of the Year Proclamations and Awards from the Westchester/Putnum PE Society Chairman, Deputy County Executive and Chairman of the Westchester County Legislature. **db**



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