

# ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES  
*of Illinois*

# 2011 ENGINEERING EXCELLENCE AWARDS



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Job number 37

Date 2/4/2011

Scale: 1" = 3'

Awards Brochure Sponsored by

**CBC** *The Employee Benefits Company*

CORPORATE BENEFIT CONSULTANTS INC

**The Engineering Excellence Awards Competition recognizes projects of engineering achievement by Illinois consulting engineering firms. Entries are judged on the basis of engineering excellence, the degree to which the client's needs are met, and the benefits to the public welfare and private practice of engineering.**



Cover Photos and Page 2 Photo: SunPower – Exelon City Solar, Chicago, Illinois - Winner of the 40th Annual Engineering Excellence Eminent Conceptor Award (2011). Designed for Exelon City Solar by Environmental Design International inc.

### ► MERIT AWARDS

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Given for those projects worthy of recognition for the engineer and the owner/client.

### ► SPECIAL ACHIEVEMENT AWARDS

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Given for those projects worthy of special recognition of the engineer and the owner/client for achieving engineering excellence.

### ► HONOR AWARDS

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Given for those projects which are recognized for exceptional engineering that meet the needs of the client and benefit the public welfare.

### ► EMINENT CONCEPTOR AWARD

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Recognizes an engineering achievement which demonstrates a high degree of merit and ingenuity, contributes to the advancement of the private practice of engineering, and enhances the economic and social welfare of the general public.

# ACEC-Illinois

## 2011 ENGINEERING EXCELLENCE AWARDS

### EMINENT CONCEPTOR AWARD WINNER

#### ► Energy

#### **Environmental Design International inc.**

#### **Exelon City Solar**

Owner: Exelon Solar Chicago, LLC

Consultants: Turner Construction / Jacobs|Ryan Associates / Perry and Associates, LLC

In 2009, Exelon Corporation contracted SunPower Corporation to build a solar power plant on a 41-acre brownfield in Chicago's West Pullman neighborhood. Environmental Design International inc. (EDI) played a significant engineering role providing site civil engineering, environmental, and survey services for Exelon City Solar, a 10-megawatt solar power plant. With an aggressive construction schedule and a site wrought with challenges, EDI provided an innovative, low-impact site design, along with crucial environmental expertise that aided in this high-profile project's success. The plant, which came on line in March 2010, is expected to produce enough electricity to power an estimated 1,500 homes annually.



### HONOR AWARD WINNERS

#### ► Studies, Research and Consulting

##### CH2M HILL

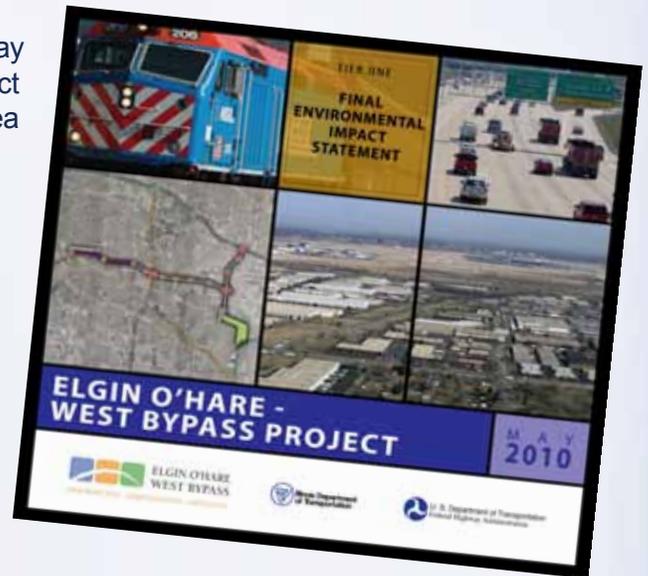
##### **Elgin O'Hare - West Bypass Tier One EIS**

Owner: Illinois Department of Transportation

Consultants: Christopher B. Burke Engineering / DB Sterlin / Images, Inc. / Landrum-Brown / Regina Webster Associates / Res Publica Group / STV, Inc. / Vlecidis-Schroeder

The Illinois Department of Transportation and Federal Highway Administration initiated the Elgin O'Hare - West Bypass project to consider transportation solutions in a 125+ square mile area bordered roughly by I-90 (north), I-294 (east), I-290 (south), and the Elgin-O'Hare Expressway (west).

- First use of tiered environmental process on an IDOT highway project
- Integrated transportation systems planning effort produced comprehensive multi-modal transportation system improvement plan
- Draft EIS received IDOT's first "Lack of Objection" rating by US EPA
- Applied IDOT's Context Sensitive Solutions policy, resulting in consensus of a Preferred Alternative in 2 years – six months ahead of schedule



#### ► Building/Technology Systems

##### KJWW Engineering Consultants

##### **Wheaton College - New Science Building**

Owner: Wheaton College

Consultants: Payette / FGM Architects / Webster McGrath & Ahlberg Ltd. / Hitchcock Design Group / Turner Construction / Johnson Wilber Adams, Inc.

Wheaton College's New Science Building is a model of sustainability using time-tested, reliable systems in a lab-intensive application. The achievement of LEED Gold for a building with 54 unique, customized teaching and research labs was a challenge the design team met with careful design and commissioning of all energy-using systems. The building is 24 percent more energy efficient than a code-minimum design and 70 percent of the electricity comes from a renewable energy provider. The \$50 Million project demonstrates the college's commitment to high level science, as well as its commitment to stewardship because of the use of sustainable systems.



### HONOR AWARD WINNERS

#### ► Structural Systems

##### **Michael Baker Jr., Inc.**

##### **Stearns Road Bridge over the Fox River**

Owner: Kane County Division of Transportation

Consultants: Christopher B. Burke Engineering / Wang Engineering, Inc. / Golder Associates, Inc.

With an emphasis on innovative value engineering, careful environmental stewardship, and extensive stakeholder involvement, Baker successfully led a consultant team through the preliminary and final design of the new 980-foot-long Stearns Road Bridge over the Fox River. With Baker's help, Kane County was able to provide to the public an aesthetically pleasing, context-sensitive, new river crossing ahead of schedule and at half the original estimated cost while minimizing environmental impacts.



#### ► Surveying & Mapping Technology

##### **Thouvenot, Wade & Moerchen, Inc.**

##### **Rock City Business Complex NARA NPRC Annex II**

Owner: Joe Koppeis, Admiral Parkway, Inc.

Thouvenot, Wade & Moerchen, Inc. helped local developer Joe Koppeis, of Admiral Parkway, Inc., turn the naturally cool, dark environment of an abandoned limestone mine in Valmeyer, Illinois into storage space for the National Archives & Records Administration. On a recent 75,000 sq. ft. expansion of the Archives space, TWM used cutting edge 3D laser scanning technology to map and model the mine's surfaces. This innovative solution allowed engineers to configure the space to maximize storage capacity, and proved indispensable to economically achieving the level of precision required for designing walls, shelving units, and trenching water mains into solid rock.



### HONOR AWARD WINNERS

#### ► Water Resources

##### **Greeley and Hansen**

##### **New Water Facility Advances Green Technology**

**Owner:** City of Chicago, Department of Water Management & DuPage Water Commission

**Consultants:** McDonough Associates, Inc. / Primera Engineers, Ltd.

Reliability, environmental stewardship, and the advancement of green technology were key goals for the innovative applications of solar technology and standby generation at the Chicago Department of Water Management's Lexington Pumping Station. This challenging project at Illinois's largest water pumping station sets a new benchmark for sustainable design. In a unique agreement, DuPage Water Commission and the Department provided project funding. The station supplies Chicago water to 800,000 Commission customers. Anticipated to achieve Gold LEED® Certification, the 1-megawatt photovoltaic and standby generating systems demonstrate Greeley and Hansen's forward-thinking applications of advanced technologies for sustainable solutions.



#### ► Transportation

##### **McDonough Associates Inc.**

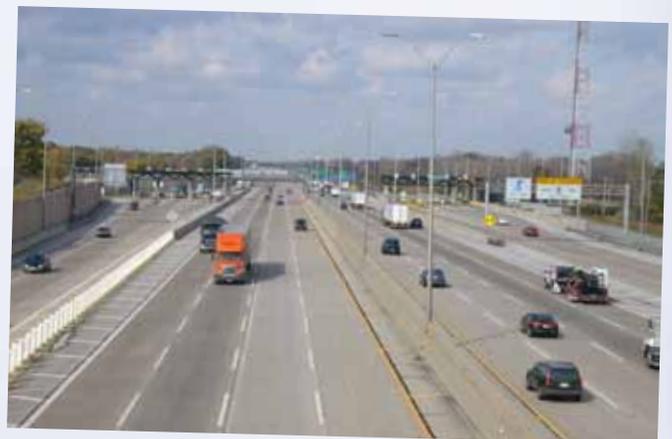
##### **South Tri-State Tollway Construction Corridor Management**

**Owner:** Illinois State Toll Highway Authority

**Consultants:** Cotter Consulting / R & G Engineering, LLC

McDonough Associates Inc. (MAI) was responsible for providing Construction Corridor Management (CCM) services for the Illinois State Toll Highway Authority as part of the \$6.3 billion Congestion Relief Program. MAI was responsible for managing 17 construction contracts valued at \$640M located between the Kingery Expressway to 95th Street. Through a pre-construction value engineering process and repackaging of the construction contracts, MAI was able to implement \$160M in savings to the project.

The project included reconstruction of the existing 6-lane roadway with an 8-lane roadway including 22 bridges, drainage, electrical, noise abatement walls, retaining walls, open road tolling, performance-based design requirements, and 7 interchanges.



### HONOR AWARD WINNERS

#### ► Transportation

##### **Hanson Professional Services Inc.**

##### **Rebuilding an Interchange on a Postage Stamp**

**Owner:** Illinois Tollway

**Consultants:** Techknow Engineering LLC / Spaan Tech Inc. / K & S Engineers Inc. / Dynasty Group Inc.

The Illinois Tollway selected Hanson to provide preliminary engineering, design and construction support services for the reconfiguration and reconstruction of the Cherry Valley interchange at I-39 on the Jane Addams Memorial Tollway (I-90).

The original interchange design did not adequately handle operating speeds appropriate for an interchange connecting two interstate highways. The new interchange – featuring a flyover ramp bridge – was built on top of the existing interchange and provides for higher operating speeds, increased capacity, and improved operations. In addition, Hanson initiated an expedited schedule to complete the design early and obtain favorable pricing.



#### ► Transportation

##### **Hanson Professional Services Inc.**

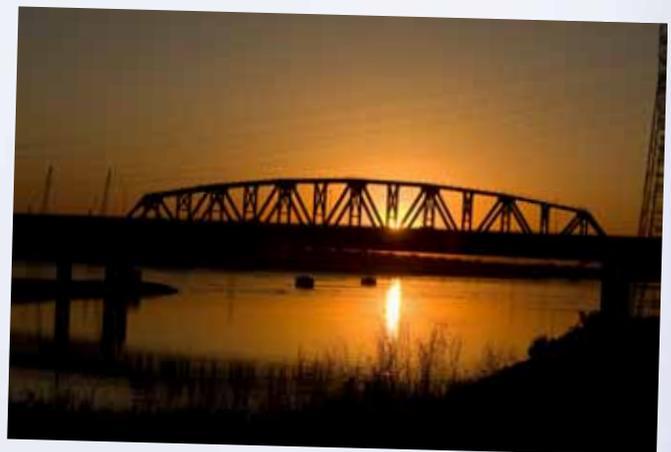
##### **New Rail Bridge Keeps Lock Project on Track**

**Owner:** U.S. Army Corps of Engineers, Nashville District

**Consultants:** Constructioneering Inc. / Harrington & Cortelyou Inc. / INCA Engineers Inc.

The U.S. Army Corps of Engineers, Nashville District, is leading one of the nation's largest ongoing engineering projects — construction of a new 1,200-foot-long lock on the Tennessee River. An integral component of the Kentucky Lock addition is the new P&L Railway Bridge that extends over the Tennessee River, part of the Corps' \$94 million railroad relocation project.

Relocation, design and construction of the high-level 3,094-foot-long structural-steel railroad bridge required extensive coordination, innovative design and logistical considerations to realign this mainline railroad over a major river crossing. Hanson served as the prime engineering consultant for this multifaceted transportation infrastructure project.



### HONOR AWARD WINNERS

#### ► Special Projects

##### **Baxter & Woodman, Inc. Consulting Engineers** **East Avenue/I-290 Water Main Slip-Lining**

Owner: Village of Oak Park

The Village of Oak Park's existing 12-inch water main spanning Interstate-290 (I-290) had been out-of-service due to water main leakage under IDOT and CTA right-of-way. The water main crosses underneath I-290 and could not be open cut for repair. Baxter & Woodman evaluated numerous technologies for the rehabilitation including; cured-in-place pipe (CIPP), horizontal directional drilling, and jack/bore. Installing a new water main would cost the Village over three times the cost of trenchless rehabilitation. In addition, rehabilitation by CIPP was not feasible because of two existing 45 degree bends. Rehabilitation of the existing water main using trenchless slip-lining was the only feasible solution that could be completed on-budget and within the approved timeframe of IDOT.



#### ► Special Projects

##### **Civiltech Engineering, Inc.** **Three Oaks Recreation Area**

Owner: City of Crystal Lake

Consultants: Hitchcock Design Group / Featherstone, Inc. / SRBL Architects / Hey & Associates / Baird & Associates / McCluskey Engineering / Primera Engineers / Cowhey Gudmunson / Testing Services Corporation

The City of Crystal Lake's Three Oaks Recreation Area was built on land acquired from a former Vulcan Materials mining property. Opened to the public on October 1, 2010 on what was once an active quarry, the 500-acre facility features:

- Recreational Fishing on Two Lakes
- Lake House with Full Service Concessions, Changing Area, and Offices
- Boat, Canoe, Kayak, Sailboat, and Paddleboat Rental at Two Marinas
- Playground with Splash Pad
- White Sand Beaches
- 2,000 square-foot Picnic Pavilion with Outdoor Fireplace
- Three Miles of Multi-Use Trails with "Interpretive Boardwalk"
- Sand Volleyball Courts
- 28 Acres of Native Prairie Restoration



### HONOR AWARD WINNERS

#### ► Special Projects

##### **Parsons Brinckerhoff**

##### **Dearborn Subway Track Renewal Project**

**Owner:** Chicago Transit Authority

**Consultants:** Cotter Consulting, Inc. / DuSable, Inc. / EJM Engineering, Inc. /  
Program Management and Control Services, LLC

The \$59 million Dearborn Subway Track Rehabilitation Project, one of the first in Chicago to be fully funded by the American Recovery and Reinvestment Act, involved the replacement of over 4 miles of existing wooden half ties, running and contact rail, special track work and structural repairs within the 60 year old subway tunnel. The project eliminated 5,500 feet of slow zones and prevented the imminent addition of an estimated 10,000 feet of new slow zones and was completed on time and within budget. It has received national recognition as an example of a successful use of ARRA funds.



### SPECIAL ACHIEVEMENT AWARD WINNERS

#### ► Structural Systems

##### **Wills Burke Kelsey Associates**

##### **Mid-County Trail Pedestrian Bridge**

**Owner:** St. Charles Park District

**Consultants:** Herlihy Mid-Continent Company / Testing Services Corporation / Thomson Surveying, Ltd. / S.T.A.T.E. Testing, Ltd.

The Mid-County Trail Pedestrian Bridge in northwest Kane County provides a vital link between the Great Western Trail/Randall Road Bikeway and the Fox River Trail. The project accomplished the following:

- Expands green way accessibility to newly emerging neighborhoods in St. Charles and South Elgin's highest growth areas;
- Enhances roadside safety by removing all non-vehicular traffic from crossing Randall Road;
- Provides an important crossing to address non-vehicular transportation and recreation needs for thousands of trail users;
- Provides an aesthetically pleasing bridge which complements the surrounding environment while also providing a landmark bridge for the Fox Valley area.



#### ► Transportation

##### **Crawford, Murphy & Tilly, Inc.**

##### **Rehabilitate Taxiway Bravo South**

**Owner:** Greater Rockford Airport Authority

**Consultants:** Testing Services Corp / American Geo Engineering, Inc.

For over 30 years, CMT has completed successful airfield planning, design and construction projects at Chicago Rockford International Airport (RFD). For the rehabilitation of Taxiway Bravo - South, CMT provided professional services for the reconstruction of the parallel taxiway to Runway 1/19 to meet the geometric and pavement design requirements to accommodate Airport Design Group (ADG) V operations. RFD is home to the second largest domestic air cargo sorting hub in the United Parcel Service system. Since its establishment in 1994, operations have grown consistently and RFD has become one of the top 20 cargo airports in the United States.



### SPECIAL ACHIEVEMENT AWARD WINNERS

#### ► Transportation

##### **Patrick Engineering Inc.**

##### **Powerton Rail Loop**

**Owner:** Midwest Generation, LLC

Patrick was contracted to provide full-service engineering, contracting, and construction management for design – build of a 3-mile rail loop for the off-loading of coal at the Powerton generating facility. The work was complicated by the need to maintain coal train operations, overcome poor soil conditions, address floodplain constraints and meet permitting requirements.

Engineering and design included surveying, environmental assessments, track geometry, embankment geotechnical and stabilization analyses, hydrology and hydraulic analyses, electrical and lighting design, and structural design of two new bridges across existing waterways. The project exceeded the client's vision and was delivered on schedule and on budget.



#### ► Special Projects

##### **Cowhey Gudmundson Leder, Ltd.**

##### **CenterPoint Intermodal Center - Joliet**

**Owner:** CenterPoint Properties

**Consultants:** TranSystems Corporation, Ruettiger Tonelli & Associates / Geotech / Wiss Janney Elstner & Associates / Hanson Professional Services / Bollinger Environmental / Dry Utility Services / Huddleston-McBride / Archaeological Resources Inc. / Testing Services Corporation / FCL Builders Inc. / Ragnar Benson Construction

CenterPoint Intermodal Center – Joliet (CICJ) is a state-of-the-art integrated logistics center and inland port developed by CenterPoint Properties in south Joliet. The initial phase of the development involved the construction of a Class I railroad intermodal facility and supporting infrastructure for the Union Pacific Railroad. Ultimately, the 3,600 acre park will feature up to 20 million square feet of industrial facilities as well as container/equipment management yards. Cowhey Gudmundson Leder (CGL) provided the prime consulting engineering services to CenterPoint Properties during the initial planning, design, permitting and construction of the CICJ project.



# ACEC-Illinois

## 2011 ENGINEERING EXCELLENCE AWARDS

### ► Special Projects

#### **URS Corporation**

#### **Salt Creek Greenway Trail**

**Owner:** Forest Preserve District of DuPage County

**Consultants:** Ardmore Associates

A “rolling” ribbon-cutting on Saturday, September 25th celebrated the completion of the Salt Creek Greenway, a 31-mile trail system for walkers, runners, and bicyclists, consisting of a coordinated system of access sites, signage and management, linking Cook and DuPage Counties along historic Salt Creek, upstream of its confluence with the Des Plaines River and the I&M Canal National Heritage Corridor.

URS Corporation’s engineering services made possible the increased recreational use which will promote economic development and tourism, enhance the image of Greenway communities, educate users about stewardship and foster appreciation of natural and cultural heritages within the Salt Creek watershed.



### ► Special Projects

#### **MACTEC Engineering and Consulting, Inc.**

#### **Illinois Tollway Corridor Services**

**Owner:** Illinois Tollway

**Consultants:** Patrick Engineering / Strand Associates, Inc. / Bowman, Barrett & Associates, Inc. / Ciorba Group / Teng & Associates, Inc. / McDonough Associates / Collins Engineers

This project included reconstructing and widening of the North Tri-State Tollway (I-94) between Half Day Road and Russell Road in Lake County, Illinois, a 22-mile corridor. In addition to the roadway, 16 mainline bridges and 13 crossroad bridges were reconstructed and widened, eight interchanges were reconstructed and a 40-acre regional detention facility and a 160-acre wetlands mitigation site were constructed – all while maintaining three lanes of traffic at all times. As part of the project, the Tollway also managed construction work on several bridges operated by the IDOT – bridges at Half Day Road, Belvidere Road and Grand Avenue.



### SPECIAL ACHIEVEMENT AWARD WINNERS

#### ► Small Projects

##### **Primera Engineers, Ltd.**

##### **41st Street Beach House**

**Owner:** Chicago Park District Developed by The Public Building Commission of Chicago

**Consultants:** Muller & Muller Architects / Infrastructure Engineering (Civil) / Pacific Construction Services

Situated on Chicago's Oakwood Beach, the Oakwood Beach Comfort Station is a live demonstration of emerging sustainable technologies. The station's rainwater harvesting system is not only sustainable; its literal exposure educates the public about how we can better utilize natural resources and reduce waste. Designed with significant daylighting and natural ventilation in mind, this prototype is easily accessible for science field trips and will be viewed by many users for years to come. Oakwood Beach and its beach house are helping to revitalize the local community and provide a new place to relax and play.



### MERIT AWARD WINNERS

#### ► Studies, Research and Consulting

##### **HDR Engineering, Inc.**

##### **Canadian National Acquisition of EJ&E Railroad EIS**

Owner: Surface Transportation Board

Consultants: MWW Group / ATS Consulting / Burrelles Luce / McGill, Gotsiner, Workman & Lepp / Sandy-McFadzean / Lucinda Low Swartz / Michael Webb / Colin Gordon & Associates / Regina Webster & Associates / Kent Peterson Consulting  
Archaeological Research Inc. / Winzler & Kelly

Whether evaluating impacts on endangered species, measuring noise or facilitating public meetings, HDR understood that the environmental impact statement (EIS) for the proposed acquisition of EJ&E rail lines by the Canadian National (CN) Railway had to withstand intense scrutiny. This high profile EIS prompted the first project site visit by Surface Transportation Board (STB) members and the first environmental staff briefing before the entire board. Successful public involvement resulted in 9,500 comment letters and 55,000 issues identified, with STB citing HDR for “responsiveness, ingenuity and creative problem solving to make the EIS for the CN-EJ&E Acquisition a success.”



#### ► Building/Technology Systems

##### **Klingner & Associates, P.C.**

##### **Adams County - New Public Health Facility**

Owner: Adams County Health Department

Klingner & Associates, P.C. was selected to provide professional services to construct a new three level 26,500 s.f. Public Health Facility for Adams County, Illinois. The building construction utilizes auger cast piers, wide flange beam steel framing, concrete slab floors, metal stud framed exterior walls with brick veneer and E.I.F.S. exterior finishes. Building provides space for exam rooms, dental operatories, offices, public waiting areas, a drive up canopy, and locker room and showers. City ordinances required the façade design to be divided up into bays to fit the streetscape of the historic downtown Washington Square area.



### MERIT AWARD WINNERS

#### ► Building/Technology Systems

##### **Teng Companies**

##### **Theory + Computer Sciences Building (TCS)**

**Owner:** Theory + Computer Sciences Building Trust

**Consultants:** Animate, Inc.

The Theory + Computing Sciences (TCS) Building on the campus of Argonne National Laboratory is a 240,000 s.f. world-class research center designed to attract the nation's leading students, researchers, and scientists. The heart of the TCS houses the world's fastest supercomputing systems. The facility also includes reconfigurable instrument laboratories, advanced digital conference center, library and office spaces that create an environment conducive to interdisciplinary interactions between researchers spanning theory, computing science, and experimental validation. By design, the TCS assists Argonne National Laboratory in pursuing its mission to broaden the intellectual scope of research activities and science education.



#### ► Building/Technology Systems

##### **Henneman Engineering, Inc.**

##### **Morris Library Renovations and Addition**

**Owner:** Southern Illinois University - Carbondale

**Consultants:** PSA - Deberry / Woollen, Molzan and Partners, Inc.

The Morris Library project was a renovation of the existing 1956 facility (269,293 square-foot) as well as a 53,830 square-foot addition. Among the many improvements to the existing building and new features of the addition are:

- Enhanced exterior building envelope
- Replacement of all mechanical systems
- Installing building automation system
- Installation of high speed I/T System throughout facility
- Replacing fire alarm systems
- Replacing electrical wiring systems
- Home to the new Academic Technology Center
- Development of a "Virtual Library" for use of electronic resources
- High density shelving for storage of materials
- Coffee Bar



### MERIT AWARD WINNERS

#### ► Building/Technology Systems

##### **Jacobs Engineering Group Inc.**

##### **Borman ATMS Communications Backhaul Replacement Project**

Owner: Indiana Department of Transportation

Consultants: Meade Electric

The Borman Advanced Traffic Management System (ATMS) Backhaul Replacement project upgraded and expanded the existing Borman ATMS, which is part of TrafficWise, an Intelligent Transportation System (ITS) implementation within the State of Indiana.

Jacobs served as the designer and integrator for the project working with Meade Electric as the primary constructor.

Enhancements to the Borman ATMS included:

- Replacing the existing wireless backbone network with a fiber optic network
- Designing and implementing a highly reliable and robust gigabit Ethernet Network consisting of three loops having logical and physical redundancy
- Enhancing and upgrading of existing ITS field locations
- Adding several CCTV locations



#### ► Structural Systems

##### **Modjeski and Masters, Inc.**

##### **Interstate 80 Mississippi River Bridge Rehabilitation**

Owner: Illinois Department of Transportation

Cracks were discovered in several cantilever floorbeam brackets of the I-80 Mississippi River Bridge. Modjeski and Masters was contracted under a four month schedule to perform emergency services to investigate, repair, and rehabilitate the cause of the cracking. The investigation phase consisted of field instrumentation and finite element analysis, which concluded that rocking of the floorbeam's top flange was the main contributor to the distortion induced stress and subsequent fatigue cracking. Modjeski and Masters prepared repair plans for replacement of all cantilever floorbeams at expansion dams and relief joints and to correct the fatigue prone details and prevent future cracking.



# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Water and Storm Water

#### **Engineering Enterprises, Inc.**

#### **Hampshire Wastewater Treatment Facility Expansion**

Owner: Village of Hampshire

Consultants: Teng & Associates, Inc. / Ream-Hauser Architects / Hutter Trankina Engineering Company / Hey and Associates / Huff & Huff, Inc. / Terracon Consultants, Inc.

Engineering Enterprises, Inc. (EEI) provided engineering services for the Village of Hampshire 2.76 MGD Wastewater Treatment Facility Expansion. The project goals were to increase facility capacity, improve effluent quality and remove Hampshire Creek from the IEPA 303(d) list for environmentally impaired waterways.

Building on the framework of process components from the previous two expansions that occurred within the last decade, this project included preliminary, secondary and tertiary wastewater treatment process improvements. The solids handling process was optimized with an expansion to the aerobic digesters, a new gravity belt thickener, a recycle flow equalization process and a new solids storage building.



### ► Water and Storm Water

#### **SCI Engineering, Inc.**

#### **IDOT National Pollutant Discharge Elimination System**

Owner: Illinois Department of Transportation

Consultants: Quigg Engineering, Inc. / RJN Group, Inc.

- Statewide construction NPDES compliance evaluations and consultation for individual IDOT districts, as requested.
- Statewide reviews of site specific SWPPPs, both prior to construction, for compliance and feasibility review, and during and after implementation, for functionality reviews and revisions.
- Workshops and presentations addressing NPDES regulations, common errors, and successful innovations and practices. Workshops and presentations were made statewide and included audiences of construction engineers, design engineers, management, as well as separate contractor workshops.



### MERIT AWARD WINNERS

#### ► Water Resources

##### **Willett, Hofmann & Associates, Inc.**

##### **Davis Junction, Illinois Wastewater Treatment Plant**

Owner: Village of Davis Junction, Illinois

Consultants: KJWW Engineering Consultants / Testing Engineers, Inc.

The Village of Davis Junction is a small rural community that experienced rapid residential growth, which resulted in capacity issues at their wastewater treatment plant. The Village hired Willett, Hofmann & Associates, Inc. to design a wastewater treatment plant that would meet the future needs of the community. The new wastewater treatment plant is a 600,000 gpd activate sludge treatment plant that includes fine screening, influent pump station, activated sludge oxidation ditch, final clarification, ultraviolet disinfection, aerobic sludge digestion, liquid sludge storage and a lab/office/maintenance building. The construction began in April 2008 and was completed in December 2009.



#### ► Water Resources

##### **Willett, Hofmann & Associates, Inc.**

##### **City of Dixon - Phase I Radium Removal Wells 7 & 9**

Owner: City of Dixon, Illinois

Consultants: KJWW Engineering Consultants

Radium reduction treatment facilities were required for the City of Dixon Waterworks System Wells No. 7 and 9 to achieve compliance with the National Drinking Water Standards for Combined Radium 226 and 228 and Gross Alpha. The addition of Hydrous Manganese Oxide (HMO) followed by pressure filtration through a sand/anthracite filter bed was the chosen treatment alternative. The location of the wells demanded the design and layout to be functional yet aesthetically pleasing and enhancing the surrounding residential and commercial areas. Both structures and sites provide for the equipment space, chemical room safety, and building functionality required.



# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Water Resources

#### **Bonestroo**

#### **John Janega Memorial Park**

Owner: Lindenhurst Park District

John Janega Memorial Park Improvement project consisted of renovation and rehabilitation of a 10-acre neighborhood park, located immediately upstream of Lake County Forest Preserve District's Hastings Lake.

Enhancement was designed to improve water quality discharging to Hastings Lake, upgrade and expand active/passive recreational areas, provide education opportunities, improve public access, and improve habitat diversity.

The project included the installation of three settling/sediment control basins, a Stormceptor®, and a new trail network with a parking area.

Innovative uses of timber boardwalk through wetlands, and combining on-site floodplain compensatory storage with wetland mitigation areas, facilitated the regulatory permit approval process.



### ► Water Resources

#### **Henry, Meisenheimer & Gende, Inc. Sparta Water Treatment Facilities**

Owner: City of Sparta, Illinois

Consultants: Barnes, Henry, Meisenheimer & Gende, Inc. / Holcomb Foundation Engineering Co.

The City of Sparta was served by a surface water treatment plant which dated to the mid-1910s. Unit process capacities, a failing treatment plant, and recent and pending water quality regulations forced the City to look at its future needs.

The new 1.8 MGD treatment plant includes three 16' x 10' x 11.6' concrete tanks (plus a future use tank) containing 81,600 square feet of microfiltration membranes. The PVDF membranes have a design flux of 22 gfd (gallons per square foot per day), and a nominal pore size of 0.04 microns capable of removing Cryptosporidium, Giardia, bacteria and some viruses.



### MERIT AWARD WINNERS

#### ► Water Resources

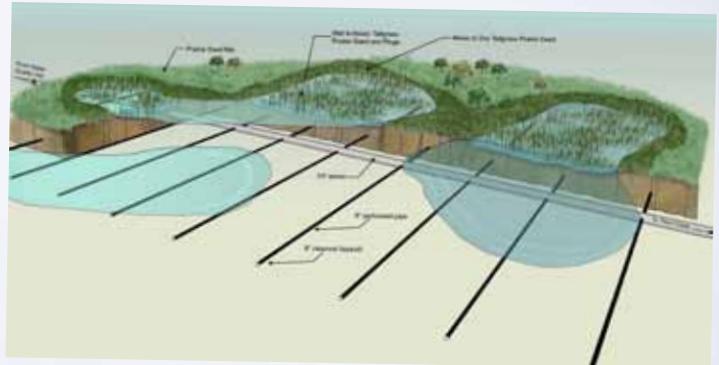
##### **Crawford, Murphy & Tilly, Inc.**

##### **Will Center Road Storm Sewer Outfall**

**Owners:** Village of University Park & Forest Preserve District of Will County

**Consultants:** J. F. New & Associates

This drainage project was required to allow the reconstruction of an existing gravel roadway to a school adjacent to Will-Center Road. Stakeholders included the Village of University Park, IL, the Crete-Monee School District, and the Forest Preserve District of Will County. An infiltration and wetland concept was developed into a green sustainable solution that provides an improvement in run-off water quality, a reduction of water quantity, and a wetland amenity, while protecting the headwaters of Thorn Creek, an impaired stream. This project demonstrates that a drainage problem can be solved at a reasonable cost, while providing benefits and satisfying stakeholders.



#### ► Transportation

##### **ESI Consultants, Ltd.**

##### **Archer Road and Parking Lot Reconstruction**

**Owner:** Village of Long Grove

**Consultants:** EJM Engineering / Testing Services Corporation / Compass Consulting Group, Ltd. / Hitchcock Design Group

ESI Consultants was retained by the Village of Long Grove to engineer parking and traffic solutions to access the historic and quaint downtown district of Long Grove. The re-engineering of this area included the creation of a new road and pedestrian paths in order to enhance circulation and improve mobility, and the reconstruction of Archer parking lot. These environmentally sensitive designs enhance the unique charm of Long Grove and expand pedestrian and vehicle access, while also preserving the historic character. Key issues included utility corridors, drainage improvements, enhanced streetscapes, and incorporation of innovative design elements such as permeable pavement, energy efficient lighting and bio-swales.



This project required coordination with numerous private and public organizations to facilitate the unified design for urban renewal with enhanced green space adjacent to the shopping district. It also created future development sites to create more communal space for special events and provided an example project for future redevelopment to continue enhancing the economic vitality of the region.

# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Transportation

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#### **Oates Associates, Inc.**

#### **Main Street Streetscape, Phase II**

**Owner:** City of Collinsville, Illinois

**Consultants:** BRiC Partnership, LLC

An organization of local merchants worked with the City of Collinsville staff to develop a plan for revitalizing the downtown area. In order to retain existing businesses and attract new business to the area, the City of Collinsville enlisted the help of Oates Associates to design streetscape improvements for Main Street.

Phase II is part of a multi-phase, federally funded beautification project. Phase II stretches seven blocks and includes sidewalk and curb replacement, handicap accessible curb ramps, crosswalk imprinting, decorative street lighting and street tree plantings. The improvements provide a safe facility for pedestrian traffic.



### ► Transportation

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#### **HR Green**

#### **Orchard Road Widening**

**Owner:** Kendall County Illinois Highway Department

**Consultants:** Traffic Surveys, Inc. / Ghandi and Associates, Inc.

Motorists who frequent Orchard Road may have noticed that the widening project has significantly improved north-south traffic flow and moves Kendall County closer to having four full lanes of traffic on the entire stretch of Orchard Road. The project consisted of the widening and resurfacing of over 1 mile of Orchard Road, from north of the Fox River bridge to north of Mill Road within the Village of Oswego. New traffic signals were installed at U.S. Route 34, Lewis Street and Mill Road. New roadway lighting within the grass median was also provided.



# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Transportation

#### **GRAEF**

#### **Eola Road Interchange at I-88 (Reagan Memorial Tollway)**

**Owner:** Illinois State Toll Highway Authority

**Consultants:** Plote Construction, Inc. / Omega & Associates, Inc. / HBM / Regina Webster & Associates, Inc. / Knight E/A

The Eola Road Interchange at I-88 is a new, full-access interchange in DuPage County, Illinois that has alleviated traffic on arterial roadways since opening in November 2009. Local roadway traffic that previously accessed I-88 at Farnsworth Avenue to the west or IL Route 59 to the east now has the option to use this new interchange. This has helped redistribute traffic in the region and resulted in a better use of arterial roadways. Additionally, this is the first interchange on the Illinois Tollway's system to exclusively have All Electronic Tolling, which is an emerging trend in the highway tolling industry.



### ► Transportation

#### **Clark Dietz, Inc.**

#### **Uptown Normal Circular Intersection and Street Improvement**

**Owner:** Town of Normal, Illinois

**Consultants:** Hoerr Schaudt Landscape Architects / The Farnsworth Group

The project objective was to revitalize Uptown Normal through creation of a destination for local and regional visitors. Multiple consultants were teamed together in rebuilding the Uptown districts utility infrastructure, reconstructing the street network, and providing unique streetscape amenities to create an inviting destination for the public.

Project scope included:

- Replacement/relocation of all sub-surface utilities;
- Reconstruction of Uptown Normal city streets;
- The areas first roundabout;
- Expanded plaza areas/curb extensions to create a pedestrian friendly location;
- Expanded center parkway along Constitution Boulevard to include a bike trail;
- A unique water feature utilizing filtered storm water.



# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Transportation

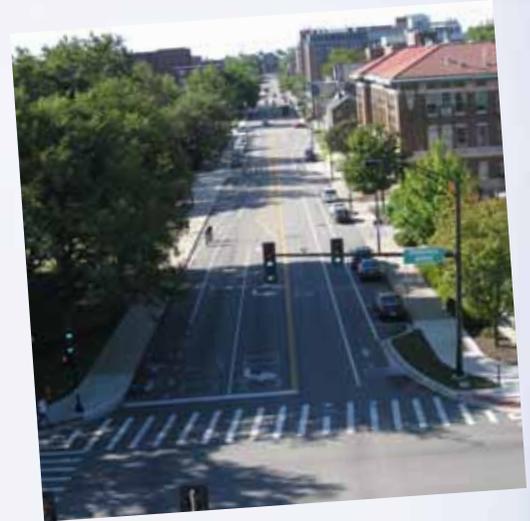
#### **Clark Dietz, Inc.**

#### **Goodwin Avenue Pedestrian and Bicycle Safety Improvements**

Owner: City of Urbana, Illinois

Consultants: Huff & Huff, Inc. / Engineering & Research Int'l, Inc. / Custom Underground, Inc.

Goodwin Avenue is a north-south route through the University of Illinois campus with high pedestrian and bicycle traffic. This project addressed pedestrian and bicycle safety issues along the corridor and transformed Goodwin Avenue into a complete street. The improvements included bicycle lanes, curb extensions, reduced width vehicle lanes, pedestrian and bicycle signing and pavement marking, pedestrian channelization, consolidated bus stops, roadway lighting replacement, and traffic signal upgrades. This project was a recipient of the FHWA 2010 Exemplary Human Environment Initiatives and was named a Public Works Project of the Year for 2010 by the Illinois Chapter of the APWA.



### ► Transportation

#### **V3 Companies**

#### **Milwaukee District North Line Bridge A-82.5 Over Golf Road**

Owner: Metra

Consultants: Wang Engineering / Geo Services, Inc. / Omega and Associates

In May of 2009, Metra broke ground on the reconstruction of Metra Bridge No. A-82.5 over Golf Road. The original structure consisted of six deck girder spans, a ballasted timber deck supported by timber bent piers. The revised design consisted of two simply supported thru girders, ballasted steel deck and reinforced concrete abutments on caissons. The original structure was one of the last remaining timber railroad bridge structures on the Milwaukee District North Line. The hallmark feature of this project was its successful re-phasing resulting in an \$816,000 cost savings and a five month reduction in construction duration.



### MERIT AWARD WINNERS

#### ► Special Projects

##### **Infrastructure Engineering, Inc. North Point Marina ADA Renovation**

**Owner:** Capital Development Board

**Consultants:** Wang Engineering, Inc. / Geotechnical Engineering Services

Infrastructure Engineering, Inc. (IEI) was retained by the Capital Development Board (CDB) and Illinois Department of Natural Resources (IDNR) to provide design, bidding and construction administration for the renovation at North Point Marina at Winthrop Harbor, Illinois for compliance with the American with Disabilities Act (ADA).

The project involved renovations to provide ADA accessibility to eight foot walkways between the docks. The ramp was designed so it meets ADA requirements with the variation in water level because of tidal effect at Winthrop Harbor. IEI prepared detailed design of:

- 80 foot aluminum truss ramp to provide maximum 1:12 slope for all water levels
- Eight feet wide floating walkway to docks
- Utilities including water, electric, lighting, phone and cable to docks
- Spud piles and cleats



#### ► Special Projects

##### **Missman Stanley & Associates, P.C. Jumer's Casino Rock Island**

**Owner:** Jumer's Casino & Hotel

**Consultants:** Planning Resources, Inc. / Terracon Consultants, Inc. / KKE Architects / Krause-Anderson Construction Company

The Jumer's Casino project involved the reclamation of a former sand and gravel mine into a luxury casino, hotel and restaurant at the southeast quadrant of IL 92 and I-280 in Rock Island, IL. The transition from a hydraulic mine site to a modern gaming facility that employs hundreds of workers and entertains thousands of people each week required the cooperation of many federal, state and local agencies and over \$100 million to accomplish. The resulting business is attractive and has accomplished a difficult task of blending into a sensitive environmental location with minimal disruption.



# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Special Projects

#### **Ciorba Group, Inc.**

#### **Martin Luther King Jr. Drive Infrastructure Improvements**

Owner: City of North Chicago

Consultants: Deigan & Associates, LLC / Soil and Materials Consultants, Inc.

Martin Luther King Jr. (MLK) Drive is the southern gateway to North Chicago's planned business district redevelopment. The project limits are from Green Bay Road (IL 131) on the west to Sheridan Road (IL 137) on the east. Redevelopment is planned along MLK Drive but most importantly for a 40-acre parcel at the MLK Drive/Sheridan intersection, the site of an abandoned foundry. The project was constructed in three phases over a four-year period. For the first phase, a new upsized sanitary sewer and water main were constructed to the MLK Drive/Sheridan Road intersection. A new railroad crossing was constructed in the second phase on the east leg of MLK Drive at Sheridan Road as part of a complete intersection reconstruction. MLK Drive was then reconstructed as a third phase. Improvements to MLK Drive included pavement reconstruction, extending the new water main and sanitary sewer to Green Bay Road, installing storm sewers with in-line detention, modernizing and interconnecting traffic signals and installing decorative street lighting.



### ► Special Projects

#### **Collins Engineers, Inc.**

#### **Chicago Riverwalk**

Owner: Chicago Department of Transportation

Consultants: Ross Barney Architects / Singh Engineering Inc.

Collins Engineers, Inc. (Collins)—along with electrical design and architect subconsultants—was retained by the Chicago Department of Transportation (CDOT) to design walkways along the Main Branch of the Chicago River, including below the North Michigan and North Wabash Avenue drawbridges that cross the river in downtown Chicago. The \$20 million project—part of a larger plan to develop the downtown riverfront—included construction of “under-bridges” in front of the existing bridge abutments at Michigan and Wabash, providing pedestrians with the ability to walk along the river from Lake Shore Drive to State Street with no interruptions by street level traffic.



# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Special Projects

#### **Fehr-Graham & Associates, LLC**

#### **Read Park Basketball Court/Ice Rink Facility**

Owner: Freeport Park District

Consultants: Testing Services Corporation / Legacy Design, Inc.

Through an Illinois Department of Natural Resources grant, the Freeport Park District was able to improve several areas of their park for recreational use. As part of these improvements, Fehr-Graham & Associates designed a multi-use outdoor basketball court / ice skating rink. This multi-use facility was constructed of a concrete slab and side walls meeting the dimensions of a regulation hockey rink. The design also incorporates perimeter fencing, lighting, removable basketball goals and a controlled drainage system, which allows the facility to be used as a basketball court during warmer months and an ice skating rink during the winter.



### ► Special Projects

#### **Environmental Design International inc.**

#### **I-294 Rebuild & Widen Dempster-Willow Phase III Eng.**

Owner: Illinois Tollway

Consultants: Infrastructure Engineering Inc. / Milhouse Engineering Inc. / S.T.A.T.E Testing / TranSystems

In Fall 2006, the Illinois Tollway began the \$1.34 billion rebuild and widening of the Tri-State Tollway (I-94/I-294). Named the #1 Road Project in North America for 2009 by Roads & Bridges magazine, the project added a fourth lane in both directions. Environmental Design International inc. (EDI) served as the Construction Manager for the project extending from Dempster Street to Willow Road. In this role, EDI managed roadway inspectors, structural specialists, material testers, surveyors, and design engineers. EDI also played a crucial community relations role during all phases of this project.



# ACEC-Illinois 2011 ENGINEERING EXCELLENCE AWARDS

## MERIT AWARD WINNERS

### ► Small Projects

#### **Fehr-Graham & Associates, LLC**

#### **Waste Water Treatment Plant Upgrade Project**

Owner: Lost Lake Utility District

The Lost Lake Utility District (LLUD) Waste Water Treatment Plant Upgrade Project consists of the complete replacement of the former activated sludge sequencing batch reactor plant with a Re-circulating Sand Filter (RSF) System. This upgrade was necessary to address concerns resulting from a 2006 Illinois Environmental Protection Agency inspection and was developed as part of LLUD's formation as an independent utility district. This project was completed and has been in operation since September 2010. Fehr-Graham & Associates was involved in all facets of the LLUD WWTP project from the conceptual design, financing, design and development, permitting, bidding, and construction.



### ► Energy

#### **Primera Engineers, Ltd.**

#### **District 7 Police Station**

Owner: Chicago Police Department Developed by The Public Building Commission of Chicago

Consultants: VOA / Terra Engineering, Ltd. / Matrix Engineering / Correct Electronics

The District 7 Police Station is one of many stations being built across Chicago. These new 42,000 square foot prototype stations will act as a "virtual power plant" with on-site power generation, helping Chicago achieve a goal of producing significant quantities of electricity from distributed generation by 2010. The new prototype design achieved a LEED Gold Rating, with many of the required credits resulting from improved MEP system designs which Primera provided including energy efficient lighting, improved ventilation effectiveness and air quality, controls to monitor indoor comfort and building energy usage, and low flow plumbing fixtures.



# **ACEC-Illinois**

## **2011 ENGINEERING EXCELLENCE AWARDS**

### **► PANEL OF JUDGES**

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**Amr S., Elnashai**, PhD, Dept Head Civil and Environmental Engineering, UIUC  
**Lisa Mattingly**, Administrator of Professional Service, Capital Development Board  
**James Mayka**, Community & Land Revitalization Branch Superfund Division, USEPA  
**Scott Stitt**, Bureau Chief of Design & Environment, IL Dept. of Transportation  
**Greg Stukel**, Deputy Director of Program Controls/System Integrity, Illinois Tollway  
**Somali Tomczak**, Sr. Manager of Environmental & Safety, NICOR

### **► AWARDS COMMITTEE**

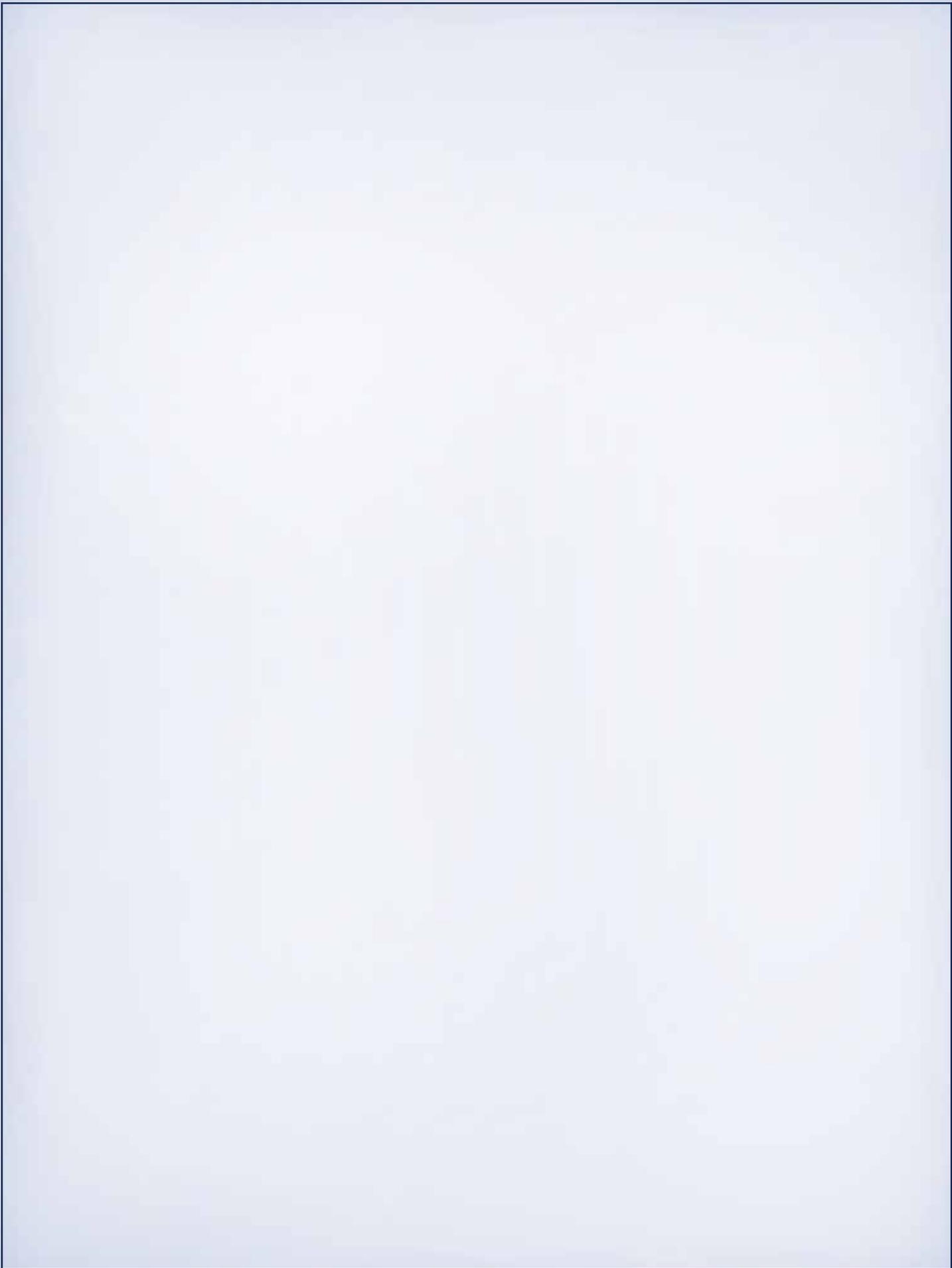
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**Gary A. Wilken**, Chair, HDR Engineering, Inc.  
**Amrou Atassi**, CDM  
**Dave Clark**, ESI Consultants, Ltd.  
**Sarah Czaplicki**, TranSystems Corporation  
**James M. Daum**, Bowman, Barrett & Associates, Inc.  
**John Eckerle**, AECOM  
**Phillip D. Frey**, T.Y. Lin International, Inc.  
**Andy Hanfland**, Farnsworth Group  
**Mohammad Shabbir Hassan**, URS Corporation  
**Amy Kay**, Hanson Professional Services Inc.  
**Douglas C. Knuth**, Jacobs Engineering Group  
**Sean LaDieu**, Huff & Huff, Inc.  
**Kevin Nelson**, Crawford, Murphy & Tilly, Inc.  
**John P. O'Neill**, A. Epstein and Sons International, Inc.  
**Holly Ost**, Burns & McDonnell  
**Tom Ratzki**, Black & Veatch  
**William J. Sleeman**, Benton & Associates, Inc.  
**Anthony Standish**, Strand Associates, Inc.  
**Robert J. Stern**, Teng & Associates, Inc.  
**Janet L. Wackrow**, Collins Engineers, Inc.  
**Gaye Kick**, ACEC-Illinois

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