

2011 E-Week Seminar Descriptions

BRIDGES

Fast Track Replacement of 9W over Cedar Pond Brook Bridge

By: Mark Struzinsky & Ranjit Singh; NYSDOT - mstruzinsky@dot.state.ny.us; rxsingh@dot.state.ny.us

The existing deck truss bridge was replaced with a three span continuous steel girder bridge. Contract plans for the proposed bridge were prepared to accelerate the project delivery in order to minimize the cost and inconvenience to the travelers. The time spent from beginning of design to bridge opening to traffic was only twelve months. Structural steel and bearings were purchased by the state before letting out to bid in order to meet fast construction schedule requirements. Design, Procurement Contracts and Construction will be discussed.

Improving High Performance Concrete with Internal Curing

BY: Bill Wolfe; Norlite - whwolfe@norliteagg.com

Several HPC bridge decks have been recently cast utilizing saturated lightweight aggregate fines to internally cure and improve the properties of the concrete. Internal curing has shown increases in strength, durability and service life in the lab. Recently several decks have been cast to evaluate the effectiveness of internal curing. This program will discuss the findings in the lab and in the field.

I-90 Over Cattaraugus Creek Bridge Scour Reevaluation and Plan of Action

By: Kenneth Avery, PE, CFM, D WRE; Bergmann Associates- kavery@bergmannpc.com

The New York State Thruway Authority (NYSTA) recently completed a bridge scour reevaluation and prepared a Plan of Action for the scour critical I-90 bridge over Cattaraugus Creek. Highlights of the project included: a 33% reduction in theoretical local pier scour predictions using current HEC-18 pier scour equations and new survey; pier cofferdam survivability analyses using updated record information and analyses methods; troubleshooting of previously installed scour monitoring devices and field assessment of previously constructed scour countermeasures; development of new flood and post-flood monitoring and inspection procedures; and recommendations for additional scour countermeasures to protect the bridge for its remaining useful life.

The Cross Street Bridge Design-Build Project, Middlebury, VT

By: Mark Colgan, PE; VHB Engineering - mcolgan@vhb.com

Presentation of the first major Design-Build transportation project in Vermont with the longest simple span precast post-tensioned, spliced concrete girders in the country. From funding through construction, this unique project can claim many first time achievements. In addition to technical and contract firsts, the \$16 million project received no funding from Federal or State sources, and was fully-funded by town and college sources. Project includes a 480 ft.long new bridge over the river and railroad, a new roundabout on Main Street, and several new downtown streets. Design & construction was completed in 24 months.

Ultrasound (UT) nspection of Bridge Hanger Pins

By: Michael Januszkiewicz, PE; Modjeski and Masters, Inc. - msjanuszkiewicz@modjeski.com

A discussion of the process and techniques used for a thorough UT inspection of in-service bridge hanger pins. Included in the discussion will be a review of UT pulse-echo basics, interpretation of return signals and various access techniques.

BUILDINGS

Mold, Water and Buildings

By: Todd Crawford; NYSDOH- trc05@health.state.ny.us

Mold growth in buildings is a symptom of water damage. Many water problems in buildings are supposed to be anticipated during the design stage and some preventive practices are required in the New York State Building Codes. Other practices to maintain buildings to prevent water damage are given in the Property Maintenance Code. This course describes mold occurrence and growth, health effects, water dynamics and discusses relevant building codes that may prevent mold damage. Several case studies are presented and discussed.

Absorption Heat Pumps in Modular Boiler/Chiller Systems – Using Renewable Energy to Achieve the Next Generation of Thermal Efficiency for Hydronic Heating and Cooling in Commercial Buildings

By: Erin Sperry; Fulton Heating Solutions - erin.sperry@fulton.com

Absorption heat pumps can achieve heating efficiency levels as high as 150 percent by extracting heat from renewable energy resources such as the ground, water or ambient air. Absorption heat pumps can also perform cooling to reduce peak electrical demand. Absorption heat pumps can be used in modular heat pump-boiler-chiller systems to provide building owners a new opportunity for significantly improving energy efficiency and reducing CO2 emissions in schools, hospitals, office buildings, universities and manufacturing facilities. Calculation procedures will be presented to enable seminar attendees to evaluate design concepts and to perform relative sizing of heat pump, boiler and chiller components in system applications.

Tips to Optimize Structural Masonry

By: Keith Lashway; International Masonry Institute – klashway@imiweb.org

This seminar will discuss the many tips for designing and specifying structural masonry to make certain that project documents include both architectural and engineering requirements for quality masonry construction.

Connected Building Solutions Architecture

By: Tim Hurley; Panduit Corporation - tph@panduit.com

Connected building architectures provide a platform for secure, scalable and interoperable systems throughout an enterprise. Most systems can be physically converged through shared conduit, cable trays, and building pathways; others will converge logically through a switched IP network. By capturing and transporting all operational and services data over a physically converged network infrastructure, it becomes possible to implement facility policies that support business requirements and tenant/customer needs.

2003 & 2006 IBC Seismic Design Requirements for Distributed Utilities

By: Shannon Rose; ISAT – srose@isatsb.com

The purpose of this seminar is to provide a solid base of knowledge regarding the 2003 and 2006 IBC relative to the seismic bracing of Mechanical, Electrical, Plumbing and Fire Protection utilities. ISAT is dedicated to empowering the construction industry to streamline and improve seismic building code compliance through education, innovation and service

CHEMICAL

Cathodic Protection for GeoThermal Wells

By: Uriel Oko, PE, PhD; Corrosion Services - oko@CorrosionServices.us.com

Energy costs for heating and air conditioning are reduced by 30 to 50% when the heat exchanger is buried in soil. Copper tubing, being the most effective heat exchanger, is subject to corrosion from chemicals and soil bacteria. Cathodic protection is one method for effectively protecting the copper tubing. The technology and its costs are discussed.

Modeling and Applications of the Rensselaer Particle Processor, A Novel Fluid-Particle Contactor

By: John Paccione; SUNY at Albany - jdp07@health.state.ny.us

This seminar will discuss the evolution of the RPP from antecedent devices and then introduce the fluid-particle contact system as a concept and then discuss how to model it. Several examples for uses of this system will be presented and a short discussion will be held on how RPP systems have been already applied to real-world processing. System design and process control will be discussed. A real world model will be provided that will demonstrate how to achieve certain operating conditions using the three input variables.

The RPP is a fluid-particle contact device that has several attributes of traditional riser reactors (or circulating fluidized beds) but has a unique control system. The RPP was developed at Rensselaer Polytechnic Institute by a research group in the Chemical and Biological Engineering Department. The RPP has the ability to be modeled using traditional multiphase flow equations, some of which have been developed very recently.

Building Codes for the Chemical Engineer

By: Kevin Merrikin; Stantec - Kevin.merrikin@stantec.com

This Seminar will review selected sections of the ICC Codes (Building, Fire, and Mechanical) with a focus on identifying the ways in which a chemical engineer can support in the design of a manufacturing facility beyond the constraints of process piping and process equipment design. Specific subjects will focus on hazardous materials, explosion venting requirements, and control areas.

Primer: Fatigue Failures

By: Ron Parrington, P.E., FASM - ron@imrtest.com

Fatigue is the most common failure mechanism when components fracture. This primer will cover the basics of fatigue, fatigue testing, and fatigue failure analysis. Numerous examples of fatigue failures will be reviewed.

CIVIL

Steel Fiber Reinforced Concrete

By: Heidi Helmink and Tim Lussier; Bekaert Corporation - Heidi.helmink@Bekaert.com; Tim.lussier@Bekaert.com

Presentation will focus on the basics of Steel Fiber Reinforced concrete with an emphasis on Precast Concrete and Lightly Loaded Flooring Applications.

The Science and Application of Ultraviolet Light Disinfection for Drinking and Recreational Water

By: John Paccione; SUNY at Albany - jdp07@health.state.ny.us & Mark Wykes; NYSDOH – mgw03@health.state.ny.us

The proper implementation of UV technology in drinking and recreational water systems requires understanding how UV disinfection works and how to implement it for its effective use. This discussion will emphasize implementation strategies for recreational and drinking water systems and will provide techniques to calculate how to ensure water has been provided with sufficient disinfection. Design guidelines for specifying reactors and their operation will be presented.

Forensic Investigation of Hardened Concrete: Water/Cement Ratio

By: Julius Bonini, PE, Andrew Smith, PhD, Uriel Oko, PhD, PE and Frank Anderson, PE; The M&P Labs – boninij@the-mandp-labs.com

The relationship between water and cement content plays a major role in the performance of concrete. Correct water-to-cement ration (w/c) is critical for sound, crack-free concrete. The desired proportions are specified in the ix design, however many processing issues from mix design to finishing can influence the final w/c ration, and the ultimate performance of the as-placed concrete. When problems do occur, it can be difficult to determine forensically the w/c ration in hardened concrete to help establish the root cause of failure. This presentation will review the basic chemical reactions in concrete, illustrate problems that occur with improper w/c ration, and discuss the application and limitations of forensic techniques available to determine w/c ration in hardened concrete.

Subsurface Utility Engineering

By: Kenneth Kerr; InfraMap & John Midyette - Kkerr@inframap.net

InfraMap is a leading provider of Subsurface Utility Engineering (S.U.E.) and Utility Infrastructure Mapping. The seminar will include the S.U.E. process, typical equipment, benefits of S.U.E. and deliverables.

Stone Strong Retaining Wall Seminar

By: Adam Baker; LHV Precast, Inc – lhvprecast@worldnet.att.net

This seminar is on precast concrete retaining wall design with introducing the stone strong system along with its use as bridge abutments.

ELECTRICAL

Hydroelectric Power: Lessons from the Past, Models for the Future – (Thursday)

By: James Beshia; Albany Engineering Corporation - jim@albanyengineering.com

Jim Beshia, president of Albany Engineering Corporation, will discuss the science and theory behind effective, aesthetic design of hydropower plants that work within their natural environment and make full use of resources. The discussion will include an overview of past and current projects, which include historic restorations, underground powerhouses and other innovative features.

Fundamentals of Harmonics (Thursday)

By: Louie J. Powell, PE- lpowell1@nycap.rr.com

Power engineers are generally aware that harmonic currents can flow in power systems. This presentation will cover the basic concepts of power system harmonics – where do they come from, what harm do they do, and how can they be managed.

Introduction to Power System Stability (Thursday)

By: Ronald Hauth; Rhauth1@nycap.rr.com

Maintaining the stability of our electric power systems is vital to our economy and national security. The basic principles of power system stability is presented with minimal recourse to the complex equations inherent in a complete treatment of the subject. Beginning with the classic two-machine system model, the causes of instability, and ways to avoid it, are discussed. Simple graphic methods and a computer simulation are used to illustrate the concepts. Computer simulation of large practical-sized systems is discussed.

An Introduction to Current Regulators (Thursday)

By: David Torrey; Advanced Energy Conversion, LLC; davidtorrey@advancedenergyconversion.com

Current regulators are used heavily in both inverters for electric machine systems and inverters that interface renewable resources to the utility. This seminar will discuss the structure, design, and implementation of current regulators for these applications.

Neher-McGrath Formula Simplified (Thursday)

By: James R. Barrett; CG Power Solutions USA Inc - jbarrett@cgpowersolutions.com

The Neher-McGrath formula can be used by engineers as an alternative to the NEC Ampacity Tables. Unfortunately, few engineers know how to apply it. This presentation will unwrap the details of the formula and explain how and when to use it.

Balancing Wind – Embracing the Challenge (Friday)

By: Rana Mukerji; New York Independent System Operator (NYISO)- rmukerji@nyiso.com

As intermittent renewable energy sources (such as wind power) grows in New York, market mechanisms have to be adapted to seamlessly integrate this resource to the grid and harness all the cost and environmental benefits.

Investigation of Nuisance Trips in Microprocessor Based Transformer Differential Relay (Friday)

By: Peter Sutherland; GE Energy - Peter.Sutherland@ge.com

Discussion of features of microprocessor based Transformer Management Relays with a real world example of solving problems in relay installation using these features.

National Grid Smart Grid – (Friday)

By: Vincent J. Forte, Jr.; National Grid - Vincent.Forte@us.ngrid.com

National Grid continues pursuing Smart Grid. This presentation will provide an update on the current status of its pilots for this new integration of technologies. It will also provide a good review of the technology of the Smart Grid.

Introduction to Synchronous Condenser Applications on Today's Electric Transmission System (Friday)

By: Arthur C. Depoian, PE; General Electric - Arthur.Depoian@ge.com

Synchronous Condensers were commonly installed by utilities through the 1970's when other technologies became more cost effective. Changes in today's electric power transmission grid have presented applications where synchronous condensers are again the preferred technology. These applications will be discussed.

Understanding Ethics for the Design Professional (Other)

By: Guy Piddington; Poole Professional – New York, Inc. - gpiddington@poolepl.com

Review the fundamental canons of the design professional's Code of Ethics, examine case studies and review how design firms apply ethics to sound business practices. Throughout this interactive workshop, participants are asked to make ethical judgments, based on actual cases. Additionally, participants will learn strategies for ethical decision making that can be employed within their own organizations.

ENERGY

Building Energy Performance Design Assistance with Parametric Studies

By: James A Fireovid; RW Beck - fireovidj@saic.com

Parametric studies are discussed using several local new building projects. Building energy performance is determined with the hourly building simulation program eQUEST. Variables studied include insulation levels, glass performance, equipment efficiency, and site parameters. The analysis of the simulation results focuses on optimization based on reducing peak loads, annual utility cost, and life cycle costs.

NYSERDA's New Construction Program: Technical Assistance and Financial Incentives

By: E. Stephen Finkle; NYSERDA - esf@nyserda.org

This presentation will give an overview of NYSERDA's New Construction Program (NCP). The NCP offers technical support to building design teams and financial incentives to building owners to effect a permanent transformation in the way buildings are designed and constructed in New York State. These incentives are based on the anticipated building energy efficiency improvements. All incentives are offered on a first-come, first-served basis, subject to funding availability. In addition, the NCP offers services and incentives to building owners and designers to encourage green building practices, green building certification, and improvements in industrial and process efficiency. NYSERDA also offers funding for commissioning and bonus incentives for other efficiency measures.

Energy Savings with Compressed Air Systems

By: Rich Rappa, PE, CEM; NYSERDA/CHA – rrappa@chacompanies.com

An overview of compressed air systems and the opportunities to improve and optimize energy efficiency from both a supply and demand standpoint will be presented. Case studies will be presented. Also an overview of NYSERDA programs and what is available for technical assistance and incentives for system upgrades will be discussed.

Linking Energy to Lean Manufacturing

By: Rich Rappa, PE, CEM; NYSERDA/CHA – rrappa@chacompanies.com

This presentation will discuss the benefits of linking energy to lean manufacturing initiatives. Developing an energy stream map and future energy stream map will be presented along with case studies. An overview of how NYSERDA programs can provide technical assistance and incentives for lean manufacturing improvements will also be discussed.

Case Studies of NYSERDA's Existing Facilities Program

By: Scott Smith; NYSERDA - SAS@nyserda.org & Khaled Yousef, PE; R.W. Beck, An SAIC Company- Khaled.a.yousef@saic.com

This presentation will discuss NYSERDA's Existing Facilities Program (EFP) and the available incentives for energy efficiency improvements for facilities throughout New York State. Incentives are provided to encourage Applicants to implement cost-effective energy efficiency projects that deliver verifiable annual energy savings. Case studies will also be discussed that highlight the energy efficiency measures, incentives, and results of projects in the Existing Facilities Program.

ENVIRONMENTAL

Hudson River Dredging - Phase 2

By: David King; USEPA; King.david@epa.gov

The second phase of the PCB dredging project in the upper Hudson River will begin in the spring of 2011. This presentation will describe the changes in the dredging program and expectations for the future of the project.

Village of Hillsdale, NY – Decentralized Wastewater Collection and Treatment System-Case Study

By: G. Norman Schreib, PE; Wastewater Technologies – sepc@tds.net, Doug Clark and Erin More Clark Engineering

Case Study: Village of Hillsdale, a small community's decentralized wastewater collection and treatment solutions which is flexible, cost effective and responsive to the needs of the community with a minimal footprint utilizing STEP collection, small diameter force main and advantex textile packed bed filter.

Empire Generating – Environmental & Engineering Aspects

By: Janis Fallon; Empire Generating Co, LLC - jfallon@empiregen.com

Empire Generating is a new 635 mW combined cycle electrical generating facility in Rensselaer that went commercial in September 2010. The presentation will cover the environmental engineering aspects of permitting, building and operating a new power plant in New York from Article X permitting, remediation of the brownfield site to operational environmental requirements.

Residential Indoor Air Quality

By: Jill Palmer-Wood, Asso.AIA, Asso. Prof – HVCC - j.palmerwood@hvcc.edu

Environmental (Climate & Biological), Energy Efficiency (Ventilation & Construction Materials), and Biological entities are the foundation to healthy indoor air quality. Learn how to identify common problems associated with poor indoor air quality and how to create or maintain a healthy living environment.

Development of an Effective Energy Management Plan

By: Silvia Marpicati, P.E. of Malcolm Pirnie, Inc. - smarpicati@pirnie.com

NYSERDA, through the Focus on Municipal Water and Wastewater Program, has developed the *Water & Wastewater Energy Management Best Practices Handbook* and several other tools engineers can utilize to help develop energy management plans and complete detailed energy studies. This presentation will demonstrate how engineers can utilize the information and apply the tools to day to day analysis. Example case studies will be presented and explained.

GEOTECHNICAL

The Use of Lightweight Aggregates in Geotechnical Applications

BY: Bill Wolfe; Norlite- whwolfe@norliteagg.com

Much of suitable land in the Northeast already has been developed. As new projects are designed, land that was once thought to be unbuildable is being considered. Many of these projects have utilized the specialized properties of lightweight aggregates to solve their design challenges. This presentation will discuss the manufacture of lightweight aggregates, the physical properties of LWA used in geotechnical designs, and several different case studies from throughout the country.

The Lake Champlain Bridge: A Long History of Poor Soils

By: Robert Burnett; NYS DOT - bburnett@dot.state.ny.us

The abrupt closing of the Lake Champlain Bridge in October 2009 initiated an extensive investigation of several locations along the lake for the siting of possible temporary bridges, ferries, and a permanent replacement bridge. This talk will discuss that effort, historical investigations for the original bridge, and the foundations for the replacement structure.

Chapter 18 of the Building Code-Soils and Foundations

By: Christopher Paolini, PE; CME Associates, Inc. – cpaolini@cmeassociates.com

This presentation will discuss in detail Chapter 18 of the New York State Building code. It will cover everything from Soils Investigation to Shear Wave Velocity Testing and Soil Liquefaction. When you attend this seminar you will know what type of investigation is required, the information that should be included in a geotechnical report, as well as how to determine Seismic Site Class.

A Municipalities Quest for Safe Drinking Water from Safe Dams

By: Warren Harris, PE & Gary Dale, PE ; CHA – wharris@chacompanies.com, gdale@chacompanies.com

This presentation will provide a case study of how a New York State Municipality stayed compliant with the newly adopted Part 673 NYSDEC Dam Safety Regulations. The case study will highlight unique situations involved in reclassifying dams, developing accurate H&H models and preparing an Emergency Action Plan that affects multiple municipalities. The project involved 2 High Hazard 'Class C' and 2 Low Hazard 'Class A' dams.

A Dam Sinkhole Doesn't have to be a \$Money\$ Pit

By: Warren Harris, PE & Katy Adnams, PE; CHA – wharris@chacompanies.com, kadnams@chacompanies.com

This case study will walk through a dam rehabilitation project starting with a response to an emergency call of a sinkhole at an Intermediate Hazard 'Class B' Dam. From the emergency call we will step through the investigation, permitting, design and construction of the Forest Lake Dam Rehabilitation. Emphasizing ways the project team attempted to minimize project costs and end the project with a safe dam.

MECHANICAL

ASHRAE 52.2 2007 Addendum B (Appendix)

By: *Danja McMillan; Camfil Farr – mcmilland@camfilfarr.com*

This seminar will provide attendees a complete understanding of the new ASHRAE test method and how it applies to selecting the correct filtration based on offending size of the contaminant. ASHRAE 52.2-2007 (B) is the new test method filter manufacturers use to prove that their products meet published data for Pressure Drop, Efficiency, Dust Holding Capacity, and Arrestance. This test standard provided the engineer and end-user the ability to select filtration based upon the offending size of the contaminate and how each MERV rating is selected. It also describes some of the issues with the new standard and what research has been done to address these issues.

Simplified System Simulation Techniques in Engineering

By: *Bill Rowen; The Turbine Engineering Consultancy- RowenWI@AOL.com*

System simulation is a valuable tool in analyzing dynamic engineering systems especially where active control elements are present. This seminar provides an introduction to system technology and offers two simulation examples, an LNG compressor drive system and a lake level control system, as successful applications of the underlying technology.

Achieving A “Sound” Design

By: *Sami Elkhazin; Vibro-Acoustics – selkhazin@vibro-acoustics.com*

This seminar is intended to educate consultants on the importance of noise control and how to correctly apply noise control solutions. It will describe the reasons that noise control is needed in different industries including Healthcare, Education and Commercial. It will also show the equipment in these buildings requiring attenuation. The seminar demonstrates the necessary steps that a consultant needs to take to correctly apply noise control, while also considering space, energy and IAQ requirements.

Cogeneration – how to assess where it works (or not)

By: *Bob Kennedy, PE and Scott Janssen; EYP/Energy - bkennedy@eypae.com, sjanssen@eypae.com*

Cogeneration is often considered a great way to save energy & dollars. This presentation will explain how to determine the best applications both technically & financially, as well as show a range of possible engine types with pros & cons for each. The importance of matching the thermal load to the cogen system will be demonstrated plus the efficiency impact of matching the electrical loading of the generator to the facility load. Issues surrounding use of cogeneration systems during grid outages will also be covered. Lastly, key factors in evaluating Life Cycle costing will be outlined.

Next Generation Machining & Modeling Technology

By: *David C. Smith, P.E.; US Army Benet Labs - dcsmith155@hotmail.com*

An overview of the US Army Benet Laboratories thrusts to adapt intelligent machine tool technologies and couple this with new initiatives within the DOD to create computer-aided-design models with embedded manufacturing information

STRUCTURAL

Adaptive Reuse of Late 19th Century Railroad Trestles as Trail Bridges (Thursday)

By: C. Michael Cooper, PE; Bergmann Associates - ccooper@bergmannpc.com

This presentation will discuss the adaptive reuse of late 19th century railroad trestles as pedestrian and trail structures. Two recent case studies will frame the discussion: the 700-ft long Running Track Bridge (Rochester, Monroe County, NY) and the 1000-ft long Rosendale Viaduct (Rosendale, Ulster County, NY). Mr. Cooper will summarize inspection and assessment techniques, structural details requiring close examination, and rehabilitation/conversion strategies.

Inspection and Evaluation of Fiber Reinforced Polymer Composites (Thursday)

By: Harry L. White, II, PE; NYSDOT - hwhite@dot.state.ny.us

Overview of what Fiber Reinforced Polymers are, how they work, and how to determine their competence in the field

Cost Estimate Comparison: Concrete Voided Slabs vs Steel Framing (Friday)

By: Mike Mota; CRSI - mmota@crsi.org

Presentation discusses the use of voided-slabs for large span office building construction. Several types of voided slabs are examined with a focus on formwork efficiency and constructability. A detailed case study of an actual office building will be discussed by comparing cost estimates for steel framing, post-tensioned concrete and cast-in-place voided slab designs

Snow Load Provisions in ASCE 7-10, What's New and Different (Friday)

By: Michael O'Rourke; RPI- orourm@rpi.edu

The most important changes in the 7-10 provisions will be discussed, reasons for the change explained and example problems provided as needed. Specific topics are: minimum loads, new thermal factor category, unbalanced loads, drift and sliding loads on adjacent roofs, RTU drifts, and ponding load requirements.

Structural Steel Design for Fabrication & Erection Efficiency (Friday)

By: John Warniczka; JPW Structural; john3@jpwriggers.com

This presentation is of fabrication and erection techniques for efficient design, along with a shop fabrication tour.

Construction of a Structurally Supported Single Point Urban Interchange (SPUI) (Friday)

By: Brenda Crudele; NYSDOT - bcrudele@dot.state.ny.us

The construction of the bridge replacement project at Rt. 7 over Interstate 87 in Colonie New York will be presented. The construction of New York State's first over SPUI will be discussed including bridge geometry, steel fabrication, substructure staging, steel erection, deck placement, and the finished bridge.

Rehabilitation of Stone Arch Bridge over Grasse River (Friday)

By: George Senft; NYS DOT - George.senft@dot.state.ny.us

Route 345 over the Grasse River is a historic nine span, laid-up stone arch bridge built around 1882. The bridge required major rehabilitation after severe cracks developed in the arch barrels. The presentation will cover the project background, alternatives considered for rehabilitation, design and construction issues.

SUSTAINABILITY

Combined Cooling Heat and Power Technology – Power Redundancy and Energy Reduction

By: David Blair, PE; BHP Energy - dblair@bhpenergy.com

An explanation of the benefits of Combined Cooling Heat and Power (CCHP) and a comparison of different technologies that are present in the marketplace. Emphasis will be on Mission Critical Facilities.

The True Energy Savings That Can Be Found in Proper Air Filtration

By: Erick Moser and Joe VanCura; RP Fedder Corp - Erick@rpfedder.com

One of the largest expenses on any building can be the HVAC system. Air filters that impede flow cause the variable speed drives to ramp up causing more power to be used which translates in to more money being spent. The other extremes are air filters that do not typically impede flow but do not provide appropriate filtration which causes the spread of disease and other harmful contaminants.

This demonstration lasts one hour and shows the difference between air filtration effectiveness in association with total costs. Additionally, it will be shown how choosing the right filtration can save thousands of dollars and ensure the proper levels of filtration are achieved.

New York City Energy Transparency-The Perfect Storm

By: Hamilton S. McLean; R. W. Beck - mcleanh@saic.com

Energy Transparency through legislated benchmark scoring has been required in the European Union since 2006. There is trend developing in the U.S. for this same type of disclosure to support increased attention on sustainability. The entire Federal sector, 8 states, 11 cities and several private initiatives now have mandatory and voluntary initiatives. Who benefits, who pays and what are the implications for energy professionals?

Asset Management and Green Initiatives Can Make Your Project a Success

By: Tim Wales and Rich Straut; Barton & Loguidice, PC – twales@bartonandloguidice.com, rstraut@bartonandloguidice.com

This session will cover definition and components of Sustainability & Asset Management and how the use of Green Infrastructure components in water and wastewater projects can lead to successful project funding.

Sustainable Design using Precast Concrete

By: Rita Seraderian; Precast/Prestressed Concrete Institute Northeast - contact@pcine.org

Designers are continuously searching for innovative sustainable construction techniques that focus on an environmental site, energy efficiency, and renewable resources. In this session, see how precast systems can meet those needs and be integrated into the design. Precast concrete systems are being used on a variety of construction segments including offices, K-16, GSA, retail and many other applications. Attendees will learn what makes a sustainable building work and how precast can be used as a design solution. The topics that will be covered are design principles within the structural and architectural components including appearance options, thermal performance (ASHRAE 90.1 and IECC) and LEED credits to which precast concrete can contribute will be discussed.

TRANSPORTATION

Determination of the Optimal Bridge Configurations for the Replacement of the Tappan Zee Bridge (Thursday)

By: Mike Anderson; NYSDOT - manderson@dot.state.ny.us

The presentation will cover the need for the project, rehabilitation options considered, the process to determine the appropriate replacement configurations, and the challenges ahead during construction.

The Lake Champlain Bridge Journey (Thursday) – 2 hours

By: James Boni, Ruth Fitzgerald, Dale Gozalkowski, Tom Potts; NYSDOT, Fitzgerald & Halliday, CHA, HNTB (respectively)- jboni@dot.state.ny.us

The Lake Champlain Bridge was suddenly closed to all traffic on October 16, 2009. This large scale bridge project was progressed from bridge closure to bid opening in just 6 months! NYSDOT and their design consultants will discuss the project history, short-term transportation mitigation, challenges & lessons learned from accelerating the design of this bridge project.

Route 590 Reconstruction: Civil Engineering from Soils to Modern Roundabouts (Friday)

By: Richard C. Bennett, PE; Bergmann Associates - rbennett@bergmannpc.com

This presentation will discuss civil engineering elements included in the reconstruction of an arterial corridor including the installation of four new modern roundabouts, geotechnical mitigation measures, porous asphalt pavement parking lots, slope stabilization measures, and gateway landscaping and aesthetic treatments.

Rehabilitation of the Orthotropic Steel Deck on the George Washington Bridge (Friday)

By: Joseph M. Englot, PE (HNTB) and Ken Serzan, PE (Parsons)- jenglot@hntb.com & Kenneth.P.Serzan@parsons.com

The course will summarize an engineering project to investigate and remedy the cause of accelerated cracking in the 33 year old steel deck on the upper level of the George Washington Bridge, the world's busiest bridge. The challenges include measuring the actual truck loading that may exceed established design values and finding a cost effective way of staging the construction with minimum impact to the public through the appropriate maintenance of traffic plan. The presentation material evaluates the rehabilitation alternatives and solutions through a life cycle cost analysis and presents detailed construction staging and MPT schemes to minimize construction duration and cost.

Improving Bridge Evaluation at NYSDOT through Applied Research Projects (Friday)

By: Sreenivas Alampalli, Anil Agrawal and Jerome O'Connor; NYSDOT, CUNY, Univ. at Buffalo - salampalli@dot.state.ny.us; rdagli@dot.state.ny.us; jso7@buffalo.edu

NYSDOT has partnered with academics and consultants to improve bridge evaluation and management through applied research projects. This session will discuss NYSDOT's efforts to assess the causes and effects of vehicle impacts at bridges, maintain consistency of bridge inspections and develop post earthquake inspection guidelines for New York.

Transportation Plans for Special Events (Friday)

By: Mark Sargent, PE; Creighton Manning - msargent@cmellp.com

Event transportation plans often involve a variety of planning and engineering elements to move thousands of people efficiently for an event. This seminar will discuss the key elements of a special event transportation plan drawing from several examples and case studies, including pre-

trip and en-route traveler information, bus operations, pedestrian management, traffic operations, permitting, and coordination with transportation providers and law enforcement agencies.

High Speed Rail – The Empire Corridor (Friday)

By: David Chan; NYSDOT and Peter Melewski; HNTB - pmelewski@hntb.com

This seminar will review the process involved in conducting a Tier 1 Environmental Impact Statement to examine the options for introducing passenger train speeds of at least 110 mph between Schenectady and Niagara Falls. NYSDOT and the Federal Railroad Administration will examine and evaluate potential improvements and projects within the corridor as part of the process.