



1st Quarter 2011 Newsletter

Making Buildings Better through Architecture, Engineering, and Environmental Consulting

ABS ANNOUNCES THE OPENING OF CLEMSON, SC AND CHARLOTTE, NC OFFICES

Applied Building Sciences is pleased to announce the opening of offices in Clemson, SC and Charlotte, NC to better serve our Clientele. Alan Campbell, PE, RRC and Steve Moore, PE will be the Directors for the two offices respectively.

With our growth, a new policy has been instituted of billing from the closest ABS office. This new policy enables every Client access to the entire ABS team and its array of services, while recognizing the need to provide our Clients exceptional value.

NEW LEAD-BASED PAINT REGULATION IMPACTS PROJECTS

April 22, 2010 marked the beginning of a new era in renovation work. On this date, EPA's Lead-Based Paint Renovation, Repair, and Painting Program Rule (RRP) officially went into effect. The RRP rule affects contractors, property managers, and others who disturb lead-based paint during renovation projects. The rule covers a wide variety of activities performed for compensation within pre-1978 residential houses, apartments, schools, day-care centers, and other child-occupied facilities. The primary objective of the RRP is to protect against lead-based paint hazards associated with renovation, repair, and painting activities. The rule seeks to achieve this goal through training, accreditation, lead-safe work practices, and remediation verification. The rule affects property owners, property managers, general contractors, specialty contractors, painting contractors and any other person or firm disturbing paint in target housing for compensation.

In response to this new development, ABS has earned its accreditation through the US EPA as an Accredited Lead (Pb) Training Provider. ABS has already held several sessions of the Lead Renovation, Repair, and Painting (RRP) course. ABS will continue to offer the Lead course, as well as our AHERA Asbestos course, OSHA courses, HazMat courses and Building Physics Courses. For more information contact Andy Rowland, CET, REPA, CRMI at arowland@appliedbuildingsciences.com.

DEFENSE VERDICT REACHED

Applied Building Sciences' Andy Rowland, CET, REPA, CRMI and Larry Elkin, PE recently assisted Patterson Dilthey, LLC, attorneys Christopher Derrenbacher and Edward Brooks to obtain a defense verdict for Boone Refrigeration, Inc. in Duplin County, North Carolina. The plaintiffs alleged that a faulty HVAC system change-out resulted in moisture accumulation within a home, which led to widespread fungal contamination. In addition to alleged property damages, the plaintiff claimed resulting health issues and a pre-trial demand of approximately \$2 Million. Rowland and Elkin combined their Industrial Hygiene and Mechanical Engineering expertise to prove that the home suffered from long-term elevated moisture conditions in the crawl space along with localized water intrusion from several other sources. In addition, the HVAC system installed by Boone Refrigeration, Inc. was shown to comply with all applicable codes and standards. Despite a marathon-like plaintiff case which lasted over five weeks, the defense team was able to demonstrate the facts of the case to the jury in a mere 3 ½ days. ABS congratulates Boone Refrigeration Inc. on their exoneration!

EXCEPTIONAL RESPONSE ABILITIES

Due to one of the fiercest Connecticut winters in decades, including record snow falls, there have been a high number of building roof collapses. Periods of warmer weather have caused the snow to melt, which then re-freezes placing significant loads on roofs. Under record snow fall events, the causation of a roof collapse is



often an overload condition. However, an engineering evaluation of a roof collapse, coupled with accurate weather information can reveal other or concurrent causations and factors. During record events, overload conditions occur when design loads plus the safety margins are exceeded. However, premature collapses can occur when there are deviations in the construction, modifications to structures or additions which generate unanticipated loads or instabilities. Poor or defective workmanship and / or the use of inferior materials also become evident in these events.

Applied Building Sciences' engineers recently braved the frigid cold of the 2011 Connecticut winter to

investigate two structural collapses and a 28 building condominium complex experiencing water intrusion. The ABS team of Luis Mariaca, PE and Joe Shahid, PE, RRC (our licensed commercial pilot), was able to organize and deploy within one day of receiving a request for engineering support. Utilizing the ABS company plane, in just three short flight hours, they stepped from the sunny tarmac in Mt. Pleasant, SC onto the slightly cooler, ice and snow covered ground of Hartford, CT. Work started immediately on the first of three projects. Two days later, the ABS team finished the site work and headed home, leaving clients feeling just a little warmer in our wake.



By utilizing the ABS plane and in-house pilot, we were able to immediately respond to investigate the structural collapses and water intrusion, saving client's time and money, and avoiding the typical commercial airport shutdowns, delays, layovers, and security issues.

TECHNICAL ACHIEVEMENTS

In 2008 the Charleston, SC Bethel United Methodist Church was declared unsafe for occupancy due to structural issues. In response, ABS was asked to perform a comprehensive study of the roof structure to address significant water and termite damage and its associated structural damage. ABS developed the investigation protocol, repair plans and specifications, and provided construction administration services. For their efforts ABS's Jason Gregorie, PE and Al Schweickhardt, PE were awarded the Technical Merit Award by the South Carolina Section of the American Society of Civil Engineers on October 22, 2010. Their award reads in part, "In recognition of outstanding technical innovations and contributions to the profession of Civil Engineering through work on the Bethel United Methodist Church Renovation in Downtown Charleston, SC". In addition, a technical paper entitled "Structural Restoration of Multi-Wythe Brick Walls of 155 Year Old Historic Building" has been accepted for publication and presentation at the 11th North American Masonry Conference to be held in Minneapolis, MN, in June.



ABS recently completed a five building comprehensive environmental study of military industrial real-estate at the old Charleston Naval Base. The study covered asbestos, organic chemicals, PCBs, Mercury and various equipment slated for hazardous disposal. It was necessary to differentiate the types, quantities and location of equipment, asbestos containing material and lighting fixtures containing environmentally "unfriendly" materials

SCDTAA ANNUAL MEETING IN ASHEVILLE, NC

For the second consecutive year, Applied Building Sciences participated in the Joint Meeting of the South Carolina Defense Trial Attorneys' Association and Claims Management Association of SC and was also a sponsor. We will also attend and sponsor this year and Alan Campbell, PE, RRC has been asked to speak.

Applied Building Sciences plans to participate in both the 2011 South Carolina and North Carolina Defense Trial Attorneys' Association summer meetings.



KEEPING UP WITH ABS EMPLOYEES...

Luis A. Mariaca, PE has joined ABS in our Chapin, SC office. Prior to joining us Luis owned and operated Engineering Structures, Consulting, Analysis and Design. Luis obtained a BS in Civil Engineering and a Master of Science in Structural Engineering from Bradley University. He has over 25 years of engineering experience, is a licensed engineer in six states, and is also a licensed general contractor. He is fluent in Spanish and French which enables him to routinely handle projects both domestically and internationally.

L. Steven Moore, PE has joined ABS as our Charlotte Office Director. Steve obtained a BS in Civil Engineering from North Carolina State University and has over 30 years of engineering and construction experience. Steve is a licensed engineer in five states and is a licensed general contractor in North Carolina.

Jason D. Gregorie, PE has added Certified Floodplain Manager to his list of credentials. He is a graduate of Clemson University with a BS in Civil Engineering and a Master of Science in Civil Engineering in 2004 and 2006, respectively. Jason's focus is general civil, pavement, and structural applications. Jason recently attended the 2011 Transportation Research Board 90th Annual Meeting held in Washington D.C. Jason is an affiliate of the Transportation Research Board (TRB) and is a standing member of the Low-Volume Roads Committee of

the Highway Division. This committee is concerned with all aspects of low-volume roads including planning, design, construction, safety, maintenance, operations, environmental, and social issues. As a member of the Low-Volume Roads Committee, Jason participates in identifying research needs; providing information to the transportation community on research priorities and procedures; reviewing papers for presentation at the TRB Annual Meeting and for publication; encouraging the incorporation of appropriate research findings into practice; and developing special programs, conferences, and workshops. Standing committee members are considered experts in their field. The TRB is one of six major divisions of the National Research Council—the principal operating agency of the National Academies in providing services to the government, the public, and the scientific and engineering communities. <http://sites.google.com/site/trbcommitteeafb30/>

M. Joseph Shahid, PE, RRC is now a Registered Roof Consultant. He is a 1990 graduate of The Air Force Academy with a BS in Civil Engineering. In 2000 Joe obtained his Master of Science in Civil Engineering from The University of Arkansas.

John J. Greenan, EIT has joined ABS and will work with the structural group in the Charleston, SC office. He is a 2008 graduate of The Citadel with a BS in Civil Engineering and in 2010 obtained his Master of Science in Civil Engineering from Clemson University. John recently attended training courses for both ATC-20: Procedures for Post-Earthquake Safety Evaluation of Buildings and FEMA 154: Rapid Visual Screening of Buildings for Potential Seismic Hazards.

Whitney E. Okon, Assoc AIA has been named the 2010 - 2011 Chair of Charleston's Building Enclosure Council (BEC-Charleston). BEC's focus is on exploring and uncovering the mysteries of the building enclosure and the related building science. Whitney was also named as one of nine 2011 American Institute of Architect's Committee on the Environment (COTE) national advisory group board members. BEC was established as an initiative of the Building Enclosure Technology and Environment Council (BETEC), the National Institute of Building Sciences, and the American Institute of Architects. BEC provides a cross-disciplinary focus/forum at the local level for those with an interest in the enclosure (envelope) of buildings and the related building science. COTE works to advance, disseminate, and advocate—to the profession, the building industry, the academy, and the public—design practices that integrate built and natural systems and enhance both the design quality and environmental performance of the built environment. COTE serves as the community and voice on behalf of AIA architects regarding sustainable design and building science and performance.

ABS's registered roof consultants continue to provide support on projects in Florida, Texas and Connecticut. Multi-state registrations of our highly credentialed staff allowed us to recently perform work on projects in SC, TX, GA, NC, AR, TN, FL, LA, VA, WV, IN, MI, MD, and MS.

HIGHER LEARNING

Alan Campbell is continuing his graduate studies at Clemson University as he pursues his master's degree in the field of Human Factors. He has completed his graduate coursework requirements and is now working on his thesis. His thesis will focus on "A Human Factors Safety Based Analysis of Ladder Setup" and he hopes to finish by early summer. Life safety, personal injury, ADA, OSHA, and slip and fall related cases are a growing segment of our forensic market.

Luis Mariaca has been continuing his Ph.D. work at the University of South Carolina. His post-graduate work is in the area of soil-structure interaction. He will have completed all required coursework this spring and will continue independent research on his dissertation.



EDITORS NOTE: This is the first Applied Building Sciences' newsletter. It is our goal to publish items of interest quarterly. We invite and encourage your comments and feedback.

MORE ABOUT APPLIED BUILDING SCIENCES:

ABS offers architectural, engineering, and environmental consulting services to various sectors in the Southeast and beyond. Our qualified professionals are experienced in structural, civil, mechanical, human factors, building envelope components, building commissioning, document review, and contract administration disciplines. Our services also include extensive technical investigations utilizing, fungal, moisture, infrared, and hygrothermal/WUFI *analysis*.

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