



DESIGN



INVESTIGATE



REHABILITATE

Simpson Gumpertz & Heger is pleased to announce its newest Senior Principals, Principals, and Associate Principal. These individuals possess the expertise and the dedication to clients that enable our continued success. Please join us in congratulating them.

#### Vince Cammalleri | Senior Principal

Vince has more than twenty years of experience designing, investigating, and repairing walls, roofs, glass curtain walls, and windows. He leads the Building Science practice group at SGH, specializing in moisture migration and condensation issues in building enclosures caused by heat, air, and vapor flow. His recent projects include building enclosure design and consulting for the American Institute of Architects (AIA) National Headquarters in Washington, DC; the Yale Art Gallery Expansion in New Haven, Connecticut; and the George W. Bush Presidential Library in Dallas, Texas. In 2009, Vince relocated to the New York office to lead its Building Technology division.



#### Jeffrey J. Ceruti | Senior Principal

Jeff has twenty-two years of experience designing, investigating, and rehabilitating building envelope assemblies. His experience includes all aspects of building enclosure technology, such as steep and low-sloped roofing systems, plaza and below-grade waterproofing, exterior wall systems, windows and curtain walls, coatings, materials and corrosion, and building science issues. He has managed enclosure consultation services for new buildings, restored historic buildings, and investigated and rehabilitated high-humidity buildings. Jeff's recent projects include envelope consulting on the Phase 1 expansion of the Museum of Fine Arts in Boston, Massachusetts; waterproofing consulting at Harvard University's Allston Science Complex; and multiple restoration and rehabilitation projects at the University of Michigan.



#### Gregory S. Hardy | Senior Principal

Greg heads our Los Angeles Structural Mechanics division and has more than thirty years of experience in engineering mechanics. His responsibilities have included natural hazards probabilistic risk assessments, earthquake experience-based studies, aircraft impact analyses, stress analyses, seismic margin studies, and shock and vibration environmental testing for hardware qualification. Greg has specific expertise in highly protected industries such as nuclear, defense, and energy and has consulted with the Electric Power Research Institute (EPRI), the International Atomic Energy Agency (IAEA), and the U.S. Nuclear Regulatory Commission (NRC). He has also conducted seismic tasks associated with the earthquake at the Kashiwazaki-Kariwa nuclear plant in Japan and a seismic risk assessment for the Darlington Nuclear Generating Station in Toronto, Canada.



#### Philip S. Hashimoto | Senior Principal

Phil has thirty years of experience in civil/structural and earthquake engineering with specific expertise in the nuclear industry. His project work spans a diverse range of technical areas, including structural/seismic analysis and design, construction support and management, equipment seismic qualification, risk assessment, and computer software development. He has performed work for the U.S. Department of Energy (DOE), commercial nuclear utilities, and the U.S. Nuclear Regulatory Commission (NRC). Phil's projects include the seismic fragility evaluation and structure response analysis for the Mühleberg Nuclear Power Plant in Mühleberg, Switzerland; a seismic evaluation of the Device Assembly Facility at the Nevada Test Site in Mercury, Nevada; and an experience-based seismic qualification of equipment at the Idaho National Laboratory in Idaho Falls, Idaho.



#### Milan Vatovec | Senior Principal

Milan has more than thirteen years of experience designing, investigating, and rehabilitating building structures and infrastructure. His experience includes new building design, adaptive reuse of existing buildings, structural integrity assessments, structural collapse investigations, and engineering research (e.g., carbon fiber reinforced polymer strengthening of structures). Milan evaluated and designed structural repairs for St. Brigid's Church in New York City and investigated a collapse at an elementary school in Pelham, New York. He was the engineer of record for the slurry wall strengthening at the World Trade Center Memorial Museum in New York City. Milan also heads the Structural Engineering division in the New York office.



#### David P. Kuivanen | Principal

Dave has more than twenty-five years of architectural experience, with a focus on investigating building failures and designing solutions to construction problems for commercial and residential buildings. Dave's work includes investigating building enclosure systems and designing and administering the construction of repairs to waterproofing, roofing, and exterior flashing and cladding systems. He has provided expert testimony on more than thirty projects that have involved litigation. Currently, Dave is working on a water intrusion and building investigation project at a major Arizona timeshare resort. He is also consulting on a concrete and envelope investigation at high-rise condominiums in Las Vegas, Nevada, and providing forensic investigation services at numerous low-rise residential and commercial buildings in California, Arizona, and Nevada.



#### Eric F. Schroter | Principal

Eric has over twenty years of experience investigating and designing commercial and residential buildings for the integrity of building enclosures, including exterior walls, windows, curtain walls, and waterproofing systems. He routinely works with architects, contractors, and building owners to diagnose and resolve existing exterior wall problems or to design for problem avoidance in new construction. He also provides expert testimony in construction cases involving litigation and dispute resolution. Eric's recent projects in California include an exterior wall and roofing system evaluation and rehabilitation at the Kaiser Permanente Medical Center in South San Francisco; exterior wall and roofing evaluations and repairs at the Solano County Law and Justice Center in Fairfield; and glazed curtain wall and building envelope design consultations at One Hawthorne Street, San Francisco.



#### Kevin C. Poulin | Associate Principal

Kevin has twenty years of experience designing, investigating, and rehabilitating buildings and other structures. He has designed new residential, commercial, retail, cultural, and mixed-use buildings ranging from six to twenty stories in height. In his renovation work, Kevin specializes in nineteenth-century and early-twentieth-century landmarked buildings requiring extensive field investigation of existing structural systems before the building is modified for a new use. His structural engineering projects include managing the design of the New Museum of Contemporary Art in New York City, peer reviewing the design for the Public Safety Answering Center in New York City, and designing the reconstruction of the Coney Island Boardwalk in New York City.



## UPCOMING EVENTS

### High Performance Building Enclosures - Practical Sustainability Symposium

30 April - 1 May 2010

California State Polytechnic University, Pomona Campus, CA  
Visit [www.sgh.com/BESS2010](http://www.sgh.com/BESS2010) for more information.



## TECHNICAL BRIEF

### Visualizing Fire and Its Impact: New Tools for the Design Professional | by Jonathan R. Barnett, Ph.D.

What if exits are moved ten feet to the left? What if we had an extra exit over there? Can we change the fresh air intake at the base of the atrium? What if the fire had started in the laundry room instead of the bedroom? Will live plants versus artificial ones have an impact on the fire safety of the building? Can a change in the way the beam is connected to the column really prevent collapse in case of a fire?

Today's fire safety engineer can answer these questions effectively, using state-of-the-art visualization tools. These tools can assist the designer with code consulting issues, address the impact of design changes and decisions, help evaluate changes in use and occupancy, and even identify important building systems and features that affect the growth and spread of a fire.

Applying advanced science and engineering principles to building design protects occupants and improves building system survivability during and after fires. At Simpson Gumpertz & Heger, we use computer models to predict fire and smoke movement through buildings and then combine these results with people movement models. The fire and smoke models create realistic images of temperature distributions, smoke visibility, and toxic product spread throughout a space. Using the combined model, we interpret people-movement changes between emergency and non-emergency situations (Figure 1). These model results are not random; they are based on the chemistry, physics, and airflow movement of fires and on human behavior modeling.

For example, Figure 2 illustrates a train fire starting under a seat. This simulation predicted that lethal conditions would develop in the train carriage in less than two minutes from ignition. A full-scale test verified that prediction.

Images may include realistic smoke densities to illustrate visibility and vectors to indicate airflow speed and direction. In addition, the models can show the impact of a fire on people movement within a specific space.

While no one likes to think about the worst happening, modeling fire dynamics, smoke movement, and occupant egress are powerful techniques that SGH can use in design and retrofit projects to enhance occupant safety and building performance in case of a fire. Likewise, SGH uses these tools during post-fire investigations to identify what went wrong or, in the best case, what went right with a building's fire safety design.

Jonathan Barnett is a Staff Consultant at SGH and one of the nation's top authorities on fire safety. He has written and lectured extensively on the topic. Jonathan is active in numerous industry associations, including the American Society of Civil Engineers; the Society of Fire Protection Engineers; the Society of Fire Safety, Australia; ASTM Committee E-5, Fire Standards; and the National Fire Protection Association. For more information on SGH's fire safety capabilities, visit [www.sgh.com/fire](http://www.sgh.com/fire) or contact Jonathan at [jbarnett@sgh.com](mailto:jbarnett@sgh.com).



Figure 1: Predicting people movement down a stair (compliments of FSEG/EXODUS).

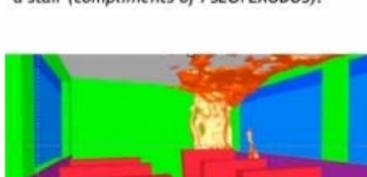


Figure 2: Model of the interior of a rail car.

## FIRM NEWS & NOTES

### Milwaukee City Hall | Rehabilitation Award

McGraw-Hill Construction named the Milwaukee City Hall project the "Best of the Best" national Renovation/Restoration project completed in 2009.

This project has also received eleven other industry awards.



## ABOUT SGH

Simpson Gumpertz & Heger Inc. (SGH) is a national, award-winning engineering firm that designs, investigates, and rehabilitates structures and building enclosures.

Our work encompasses building, transportation, nuclear, water/wastewater, and science/defense projects throughout the United States and in more than thirty other countries.

For more information, please visit [www.sgh.com](http://www.sgh.com).

SGH was named the #1 "Best Firm To Work For" by Structural Engineer and #1 among large civil engineering firms by CE News!

