



## DESIGN PROJECTS June 2011



Recent projects featuring Simpson Gumpertz & Heger's structural and building enclosure design capabilities.

### Walker Jones Educational and Community Center | Washington, DC *Structural design supports fast-tracked schedule for new school and community center*

SGH provided structural engineering and construction administration for the Walker Jones Educational and Community Center project, a K-8 school with an integrated public library and community recreation center. The school opened for classes only sixteen months after the team started design. This was the shortest design and construction timeline for a school in Washington, D.C. at the time.

[more \(PDF\)](#)

*In collaboration with Hord Coplan Macht (architect). Photo by Alain Jaramillo Photography.*



### Big Blue Bus Campus | Santa Monica, CA *Building envelope consulting aids design-build process for new eco-maintenance facility*

SGH provided building envelope consulting for the City of Santa Monica's Big Blue Bus (local bus network) campus expansion project. The design-build project included demolishing existing structures, constructing a new maintenance building, and re-grading and surfacing the campus site. SGH assisted the architect in designing the new facility's building enclosure and coordinated related efforts between the architect and the builder. Our scope of work included reviewing drawings and specifications, attending regular design meetings during the preconstruction phase, and reviewing mockup construction.

*In collaboration with HOK (architect), Morley Construction Company (contractor), and the City of Santa Monica (owner). Photo by Lawrence Anderson.*



### San Francisco State University, J. Paul Leonard and Sutro Library | San Francisco, CA *Structural design addresses seismic demands on library renovation and expansion*

As a member of the design-build team, SGH provided structural design services for a major library expansion and renovation that features a high-density, automated storage and retrieval system (ASRS). The design required remodeling and upgrading the existing building, adding 36,000 sq ft of new floor area, and designing a seismically separate, 64,000 sq ft structure for the ASRS. SGH designed the seismic upgrade of the existing building by adding concrete shear walls at the perimeter, a new interior core, and diaphragm reinforcement in the existing structure using fiber-reinforced polymer strips.

*In collaboration with T.B. Penick & Sons, Inc. (concrete subcontractor), Barnhart Balfour Beatty (general contractor), and HMC Architects (architect).*



### IESE Business School | New York, NY *Structural and building enclosure design helps bring new life to landmarked building*

SGH provided structural and building enclosure design services for the adaptive reuse of the landmarked CAMI Building, built in 1916. SGH performed an extensive field investigation of the beams, columns, footings, walls, roofs, windows, and skylights to identify areas requiring repair. SGH provided structural design to repair areas of deterioration, insert a new floor in a double-height space, add a new roof structure, accommodate new loads, and retrofit the building with new elevators. SGH performed moisture migration analyses to determine the impact of adding thermal insulation and exterior coatings to upgrade the walls and selected systems to optimize performance levels and long-term durability. SGH also designed waterproofing details and options for both new and replacement windows, new roof and wall systems, and existing building enclosure components.

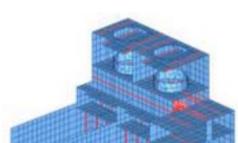
*In collaboration with Gensler (architect). Photo by David La Spina / Esto.*



### Luminant Energy, Comanche Peak Nuclear Power Plant, Units 3 and 4 | Glen Rose, TX *Advanced engineering analyses and design supports owner's application for operating license*

As part of the A/E team, SGH performed structural design, detailed seismic soil-structure interaction (SSI) analysis, seismic fluid-structure interaction analysis, and operating loading analyses for calculating demands used in the design of several Seismic Category I structures. We completed our analysis and design in less than six months, and our effort supported the client's operating license (COL) application.

*In collaboration with URS Corporation (engineer/constructor).*



## TECHNICAL BRIEFS

### Green Strategies for Structural Design | by Mark D. Webster, P.E., LEED AP BD+C

Realizing the full potential of sustainable buildings requires an integrated design approach that includes all members of the design team. A structural consultant and well-versed in green design principles and strategies brings valuable expertise to the team and should be integrated into project discussions at the earliest development stages when fundamental decisions such as materials and building layout are considered.

Structural engineers need to be familiar with both sustainable strategies and the environmental impact of the materials they specify. They also need to be prepared to go beyond the LEED checklist in order to bring a holistic environmental life-cycle approach to their projects.

[more \(PDF\)](#)



### Anticipating Wood Performance Issues | By Milan Vatovec, P.E.

Wood is a very good building material due to its availability, natural strength-to-weight ratio, durability, renewable nature, and cost. Because of these benefits, manufacturers continually develop new wood applications while owners of timber structures work with designers to extend the useful life of their existing facilities. As popularity grows for wood structures, engineers with special wood technology expertise address more serviceability challenges associated with moisture-related dimensional instability, biological agent attacks, and natural defects.

[more \(PDF\)](#)



## UPCOMING EVENTS

SGH Staff will be presenting at the following events:

### Fourth Symposium on Durability of Building Construction Sealants and Adhesives | ASTM International

16-17 June 2011  
Marriott Anaheim, Anaheim, CA  
Click [here](#) for more information.

### International Conference on Structural Health Assessment of Timber Structures | National Laboratory for Civil Engineering (LNEC)

16-17 June 2011  
LNEC's Congress Center, Lisbon, Portugal  
Click [here](#) for more information.

### Forest Products Society 65th International Convention | Forest Products Society

19-21 June 2011  
Doubletree Hotel Portland, Portland, OR  
Click [here](#) for more information.

### DesignDC 2011 | American Institute of Architects

21-23 June 2011  
Walter E. Washington Convention Center, Washington, DC  
Click [here](#) for more information.

### USC Architecture Executive Education Series | University of Southern California

23-24 June 2011  
University of Southern California, Los Angeles, CA  
Click [here](#) for more information.

## FIRM NEWS & NOTES

• SGH provided structural consulting for the winning entry in the 10Up! Young Architects Forum (YAF) Design-Build Challenge 2010. [The Periscope Foam Tower \(right\)](#) is a robotically controlled, hot-wire cut, fabricated foam installation designed by Matter Design Studio.

• *Structural Engineering & Design* quoted CEO Glenn Bell in the article "Construction in 2011: Climb from heaven," which ran in its January 2011 issue. Click [here](#) to read Glenn's complete quote as well as the full story.

• Ben Mohr (Senior Staff I) won the Excellence Award in the 2010 Structural Engineers Association of Northern California (SEAONC) Seismology Committee Structural Steel Detail Design Competition. The Jury commented that Ben's design "demonstrates a thoughtful approach to planning, fabrication, and erection in a detail with a great deal of complex behavior to consider." Ben's competition detail was based on his design for a Rappelling Tower at Camp Pendleton.

• The article "Designing building enclosures," written by Paul Totten (Senior Project Manager) and Marcin Pazera, was published in *Consulting-Specifying Engineer* in the January/February 2011 issue. Click [here](#) for the full article.



## ABOUT SGH

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

Named #1 "Best Firm To Work For" among large structural engineering firms by Structural Engineering & Design and 2011 Best A/E/C Employer among large firms by PSMJ.



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Contact: [updates@sgh.com](mailto:updates@sgh.com) | [www.sgh.com](http://www.sgh.com)  
Corporate office: 41 Seyon Building, Suite 500, Waltham, MA 02453 | Tel: 781-907-9000

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