

UZUN & CASE



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Welcome to the Uzun & Case Newsletter

We are enthusiastic about this first edition of the Uzun & Case Engineers newsletter.

"Structurally Speaking" will be published periodically to provide you with information regarding our projects and people, and to educate you about the latest developments in structural technology.

Please click on the links at the left to view an article. Once in the article, you can return to this page by clicking on the button beneath our logo, or just hit the "back" button of your browser.

If you would like to download a pdf to save or to print, you can click on the indicated button at the bottom of each article. Most articles are formatted for 8½x14 sheets, but are scaled to fit on letter sized paper.

We hope you enjoy the newsletter. Please email us with any comments or suggestions for future articles.

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February 2011

Did You Know

Uzun & Case is one of the largest structural engineering offices in the South with 30 structural engineers, most of whom have MS or PhD degrees



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FEATURE PROJECT

Georgia Aquarium Expansion



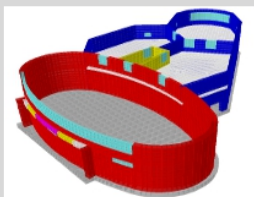
Georgia Aquarium Site



Performance Pool
in Construction



Roof Trusses
in Construction



Finite Element Model

Team

Program Manager/Owner Representative
Heery International, Inc., Atlanta, GA

Architect
PGAV, St. Louis, MO

Structural Engineer
Uzun & Case, Atlanta, GA

Contractor
Brasfield & Gorrie, Atlanta, GA

Uzun & Case is currently providing structural engineering services for a significant addition to the Georgia Aquarium. Scheduled to open on April 2, 2011, the \$110M facility will house the AT&T Dolphin Tales gallery, which includes an ± 1800 seat amphitheater as well as performance and holding pools for the show.

The project was challenged by the following special conditions:

- A tight site directly adjacent to the existing Aquarium building, outdoor sea lion tanks, and large existing electrical duct banks.
- The requirement for a 29 ft deep performance pool.
- The need for tall, column free spaces to accommodate spectator site lines.

Structural steel trusses bearing on perimeter wall framing were used to economically support the roof without the need for interior columns. Below the roof level, concrete framing was used for the floors, tanks and foundations. Precast concrete was used for the stadium seating.

The tanks were irregular in shape to accommodate space constraints and functional requirements. Uzun & Case performed a finite element analysis of these structures to accurately predict stresses and limit crack formation. Special concrete mixes were developed to increase the quality and durability of the tank walls and base.

Drilled piers were used to support building foundations, including the significant weight of the 29 ft deep pool.

Careful attention was paid to coordination with building services and performance amenities. A Warren roof truss was used to maximize space for catwalks. Much thought went into accommodating the loading and space requirements for piping, ventilation and lighting.

Uzun & Case worked closely with the contractor to address constructability and budgetary issues. For example, a large temporary work platform was created beneath the roof trusses to facilitate the erection of overhead catwalks, lighting and ventilation.

Working as a team, Uzun & Case is proud that the project was delivered on time and within budget.

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PERSONAL PROFILE

TAMER UZUN, PE, SE



Tamer Uzun is a founding principal of Uzun & Case Engineers. As the designer of such notable landmarks as the Atlanta Concourse "King and Queen" buildings, the Georgia Aquarium, and the Federal Express Corporate Headquarters, he is recognized as one of the Southeast's pre-eminent structural engineers.

Born and raised in Turkey, Tamer came to the United States in 1967 to pursue graduate studies in structural engineering at Georgia Tech. He has practiced in Atlanta since graduating from Tech in 1970. His firm affiliations include the following:

1970-1973	Ross Bryan and Associates
1973-1990	Nielsen & Uzun Engineers
1990-1993	Uzun Engineers
1993-Present	Uzun & Case Engineers

Tamer has based his professional career on hard work, technical excellence, high ethical standards, creative problem solving, and cultivating long-term relationships with owners, architects, and building contractors. These values have helped Uzun & Case grow from 6 people to one of the largest structural engineering firms in the Southeast.

"I just try to do my very best
each and every day"
-Tamer Uzun

Tamer's management style is to stay focused on engineering excellence. This approach has helped the firm secure and retain top talent over the years. On average, Uzun and Case engineers have more than 10 tenure years with the firm.

"Character is doing what's right
when nobody is looking"
-Tamer Uzun

Of great pride to Tamer are the long-term relationships he has cultivated over the years. As an example, Tamer has worked with architects tvsdesign and Cooper Carry for more than 30 years. Similarly, he maintains longterm relationships with owners and contractors, including the Alter Group, Carter, Novare Group, Hardin, Brasfield & Gorrie, and RJ Griffin.

On the personal side, Tamer has been married to Deniz Uzun for more than 40 years. He has two children, Omer and Melda, and two grandchildren.

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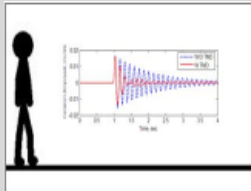
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TECHNICALLY SPEAKING

Control of Floor Vibrations



Walking Induced Vibrations

The design of building floors to limit motion has become an important part of structural design. This has resulted from advances in structural design efficiency and increasingly stringent floor vibration design criteria.

Vibrations in structures are complex to analyze and control. Among other factors, the structural engineer must consider the following:

- The source of vibration, whether human (walking, running, dancing...) or mechanical.
- The characteristics of the structure, including its natural frequency.
- The amount of damping provided by ceilings, partitions or other elements.
- The sensitivity of the people or equipment experiencing vibrations.



MCG Cancer Research Building
Augusta, GA

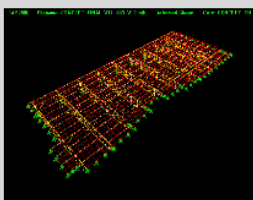
Uzun & Case Engineers is experienced with the control of floor vibrations for the following structure types:

- Offices
- Classrooms
- Laboratories
- Ballrooms
- Special Structures



MCG Cancer Research Building
Floor Vibration Study

As an example, Uzun & Case performed a vibration study for the Medical College of Georgia Cancer Research Building, which enabled us to successfully meet the velocity criteria for laboratories, MRI equipment and sensitive fish species (see images at left).



Atlanta Marriott Marquis
Ballroom Floor Computer Model

Another project for which Uzun & Case performed vibration analysis services was the Atlanta Marriott Marquis. The image at the bottom left represents the computer model made to predict vibration response of the ballroom floor at the hotel. Based upon agreed to dancing scenarios, the computer model was able to predict structural motions in real time. This information allowed us to develop an economical solution to control accelerations experienced by ballroom occupants.

Whether it is the design of a new building, or the study of an existing structure, Uzun & Case can help clients create structures that successfully meet their vibration criteria.

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HAITI STRUCTURAL ASSESSMENTS

In July 2010, acting on behalf of Holy Innocents Episcopal Church, Jim Case traveled to Haiti to make post-earthquake assessment of five churches and schools. The following is his personal account of this trip.



The Haitian People



Tent Cities



Port-au-Prince Cathedral



St. Jean Baptiste Nave



St. Matthieu Nave

The People

"The January 2010 earthquake was first and foremost a humanitarian disaster. So my first impression upon arriving there was of the people rather than the physical damage which I was sent to observe. Ironically it was their smiling faces and gentle manner which I took note of rather than their misery. They had been through a devastating earthquake, yet they were living life with grace. This made me more admire than pity them.

But there was misery. In parks, along roadways, and within churchyards, there were thousands of people camped out in tent cities. Seeing this, the magnitude of the humanitarian disaster became clear. But again there were mixed emotions. Yes it was a tragedy to be living this way, but what about the generosity of the people who donated the tents and who were serving them every day?

I couldn't help wondering why this happened to these people. Why were the buildings so poorly built, when will they get out of the tent cities, when will their government help them rebuild their lives? More questions than answers."

The Buildings

"Port-au-Prince was devastated by the earthquake, but it was not at its epicenter. Instead the earthquake was centered in Leogane, where the subjects of my investigation were situated.

A total of five buildings at the parish campuses of St. Jean Baptiste and St. Matthieu were investigated, with the goal of determining whether their structural damage was cosmetic, moderate, or severe.

The St. Jean Baptiste Nave was obviously unsafe and demolition began while I was still on the ground. The St. Matthieu School was obviously safe, but people would not reoccupy it for fear of cosmetic cracks. The ability to salvage the St. Matthieu Nave, a recently renovated sanctuary was a question. Structural repairs were recommended. Unfortunately, I was not able to stay and follow through on the reconstruction."

The Future

"It is my opinion that Haiti should be rebuilt to first world seismic standards. Pay now or pay later. Haiti's salvation lies in the ideas of the future, not the ideas of the past. Perhaps this would set an example of what could be accomplished in other endeavors.

In summary, I hope for a better future for the Haitian people and also hope to play a small part in it."



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NEWS

Current Projects (partial list)

UGA Veterinary School
Athens, GA - \$94M

CDC Building 24
Atlanta, GA - \$87M

Four Winds Casino
New Buffalo, MI - \$60M

Bayou Manor Retirement Ctr.
Houston, TX - \$32M

Augusta Convention Center
Augusta, GA - \$30M

Therrell High School
Atlanta, GA - \$30M

Emory Chemistry Building
Atlanta, GA - \$30M

UGA Special Collections Library
Athens, GA - \$26M

Coushatta Resort Hotel
Kinder, LA - \$22M

Pace Academy Upper School
Atlanta, GA - \$20M

Trinidad and Tobago Police Stations
Trinidad and Tobago, WI - \$20M

Peace Center for the Arts
Greenville, SC - \$20M

Meridian Office Building
Franklin, TN - \$20M

GA Highlands Student Center
Cartersville, GA - \$12M

**2061 Peachtree
Medical Office Building**
Atlanta, GA - \$12M

**Sandersville Tech
Health Sciences Building**
Sandersville, GA - \$9M

Simons-Law Building Expansion
Columbia Theological Seminary
Decatur, GA - \$8M

Cobb County Paratransit Facility
Marietta, GA - \$5M

**Ft. Benning Hospital
Peer Review**
Columbus, GA

Recent Awards

Arabia Mountain High School - Atlanta, GA
Honor Award, 2010
American Council of Engineering Companies of Georgia

Hudson Alpha Institute for Biotechnology - Huntsville, AL
Honor Award, 2010
American Council of Engineering Companies of Georgia

Willson Hospice House - Albany, GA
Best Architectural Design, 2010
SE Construction Magazine
&
Citation of Merit, 2010
Design Environments for Aging

Georgia Aquarium Dolphin Gallery - Atlanta, GA
1st Place Special Projects Award, 2010
Georgia Chapter ACI
&
Best Cultural Project, 2010
SE Construction Magazine

Carolinas Medical Center - Expansion/Renovation - Charlotte, NC
Award of Excellence - Healthcare, 2010
SE Construction Magazine

Kennesaw State University Health Sciences Building - Atlanta, GA
Award of Excellence - Higher Education/Research, 2010
SE Construction Magazine

Recent Professional Activities

Jim Case

Has completed his term on the GT Civil and Environmental Engineering Board after serving 6 years.
Has been appointed to the National Science Foundation "Innovative Seismic Retrofits" Advisory Board.
Has conducted recent structural review sessions for the Architecture Record Exam.

Martin Cuadra

Serves as a voting member of the Post-Tensioning Institute's Building Design and Suitability Committees.
Serves as a voting member of the Prestressed Concrete Institute's 8th Edition Industry Handbook Committee.
Serves as an associate member of ASCE Committee 41 for Seismic Rehabilitation of Existing Buildings.

John Hutton

Serves as Past-President of the Structural Engineers Association of Georgia.
Serves on the NCSEA Code Advisory Committee for General Provisions and Wind.
Serves on the Steel Deck Institute Standards Committee.

Rob Weilacher

Serves on the Board of the Structural Engineers Association of Georgia.
Serves on the USGBC Education and Events Committee.
Is the 2011 Georgia Engineering Alliance Chairman for Engineer's Week.

Daniel Kuemmerle

Serves as an Adjunct Professor for the Georgia Tech Building Construction Program.

J.R. Ubejd Mujagic

Serves on the AISI's Main Committee on Specifications
& Technical Committee 5 - Composite Member Design
& Technical Committee 3 - Loads & Analysis
Serves on the Structural Stability Research Council's Task Group 20 - Composite Member Design

Ahmet Sanli

Serves as Chairman of ASCE's Structural Engineering Institute, Local Chapter

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