

THE LOUISIANA CIVIL ENGINEER

ACADIANA BRANCH • BATON ROUGE BRANCH
NEW ORLEANS BRANCH • SHREVEPORT BRANCH

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FEATURE: **Wind resistant residential construction**



NEWS:

Section proposals attract grant
Bobby Price honored at reception

FUTURE:

Louisiana Civil Engineering Conference
and Show in Kenner
September 24-25, 2008

ANNOUNCEMENTS:

Annual Spring meeting
and Conference in Lafayette
April 16-18, 2008

Deep South Conference of
ASCE Student Chapters
in Baton Rouge
April 3-5, 2008

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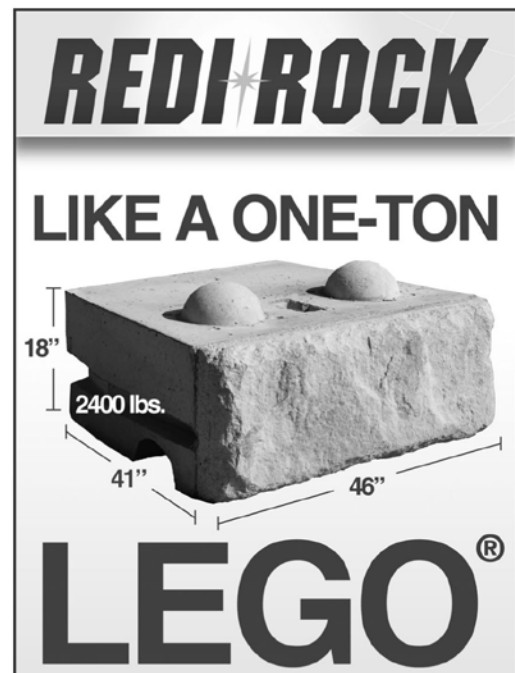
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President's Message

By E. R. (Ray) DesOrmeaux, PE

For those of you who read the President's Message in the November issue of the Section journal, you may have noticed that the President's image displayed at the top of the page changed to mine but not the name on the byline. The name of Past President, Timothy M. Ruppert, PE, was inadvertently carried forward on the byline of the President's Message article. Although the article was attributed to Tim, please do not hold him accountable for this article that I actually wrote. Tim takes a better picture than I do!... I wonder why?

May I begin with an expression of gratitude to the Section, branch and student chapter leadership for the significant level of participation and representation they provided during the ASCE multi-regional Leadership Conference in Baltimore, Maryland held January 10-12, 2008. Representatives from the Baton Rouge, New Orleans, and Shreveport Branches, and those from the Louisiana Tech, LSU, and UNO student chapters attended this important conference. In addition, our Section President-Elect, Ali Mustapha, PE, and Region 5 Director Norma Jean Mattei, PE, represented the Section during the Conference.

The multi-regional Leadership Conference that is held annually in January is designed to prepare the ASCE Members who are rising in their sections' leadership for more effective roles in leading the ASCE and our profession. The elected and appointed leadership in the Section, and in each of our branches and student chapters are strongly encouraged to plan for and include this important conference on their 2009 calendar and on the calendars of others in their leadership who may benefit.

In the November issue of the journal, it was mentioned that a special committee would be formed to address the need to update of the

Section Operating Guide. It is a pleasure to report to you that two former Section presidents, Tim Ruppert and Barbara E. Featherston, PE, graciously accepted this committee assignment. They are expected to present a preliminary report to the Section Board during its scheduled April meeting.

As previously reported to you, the Section has and senses a strong obligation to provide and maintain effective and adequate communications with all of its members. This is currently accomplished primarily through the Section journal and its associated website. How the Section continues to meet this obligation in the future is of paramount importance at this time.

To address the continuing high priority communications needs of the Section into the future, I am most pleased to report that former Section presidents, Kam K. Movassaghi, PE, of the Acadiana Branch, William W. Gwyn, PE of the New Orleans Branch, and Charles L. Eustis, PE, of the Baton Rouge Branch, have accepted the direct maintenance/management responsibilities for Section communications. These gentlemen, along with the Section's current standing Publications Committee that consists of the President-Elect — its chair — and its members, the 4 branch presidents, and the Section President who serves in an ex-officio capacity are charged with the publications responsibilities.

The Section has invited Jeffrey S. Russell, PE,... to make a presentation during the Section Annual Spring Meeting and Conference. His topic concerns the development of the Body of Knowledge, and the ASCE Policy Statement 465 for which he was one of the significant leaders.

There are two important activities that are scheduled in the next few months:

- The Deep South Conference of ASCE student chapters will be hosted by the LSU ASCE Student Chapter April 3-5, 2008. All of the ASCE student chapters in the Section and some student chapters from adjacent Sections are expected to be represented during the Conference. The Conference includes chapter competitions in concrete canoe fabrication/racing, steel bridge fabrication/erection, land surveying, and a student paper contest that is a regional competition for the Daniel W. Mead Prize for younger members. The concrete canoe and steel bridge competitions are also regional competitions. Section members are encouraged to attend this conference to observe and support these outstanding students as they demonstrate their capabilities. The LSU ASCE Student Chapter has developed a web site <http://www.cce.lsu.edu/undergrad/ASCE/2008%20Deep%20South%20Conference/home.htm> to post information and news about the developments and results of the Conference.



[edu/undergrad/ASCE/2008%20Deep%20South%20Conference/home.htm](http://www.cce.lsu.edu/undergrad/ASCE/2008%20Deep%20South%20Conference/home.htm) to post information and news about the developments and results of the Conference.

- The Section Annual Spring Meeting and Conference is scheduled for April 16-18, 2008 and it will be hosted by the Acadiana Branch in Lafayette in the Cajundome Convention Center. The Branch has assembled an impressive group of professional engineer technical session speakers to present topics addressing the diverse interest to our members.

The Section has invited Jeffrey S. Russell, PE, Head of the Department of Civil and Environmental Engineering at the University of Wisconsin-Madison to make a presentation during the Section Annual Spring Meeting and Conference. His topic concerns the development of the *Body of Knowledge*, and the ASCE Policy Statement 465 for which he was one of the significant leaders. Jeff will be providing his insights into the development and ongoing process. This topic is of significant importance to all civil engineers, and especially to our future civil engineering graduates.

Other activities being planned include:

- an Order of the Ring ceremony
- the Section awards and awards banquet, and
- the nominations for and election of the 2008-2009 Section Board of Directors.

Please check the Section website for further information concerning the Section Annual Meeting and Conference agenda and registration form. They should be available some time in early February and they will be regularly updated to reflect the latest changes.

About the cover: The cover photograph also appears as Figure 10 in the feature article of this issue, "Wind resistant residential construction." It dramatically demonstrates a particular means — threaded rods — that is used to provide a competent load path through the structure of a building to its foundation for the purpose of resisting the uplift and overturning forces from the high wind loads that are applied to residential construction in areas like coastal Louisiana.

❖ Quotes ❖

Continuing education: ...students and educators ... must know that 10, 15 or 20 years after graduation society will require and, in fact, demand their unqualified professionalism to solve the problems that have not yet been imagined.

- Robert S. Miller III, PE
NSPE President

Publicworks: In 5 years, we built Hoover Dam. From 1931 to 1936,... the Colorado River was diverted with tunnels blasted into the Black Canyon walls, a town was built to house...workers..., 3.25 million cubic yards of concrete were poured into a dam reaching 726.5 feet high — 2 years ahead of schedule... Who believes we could do something similar today, that political bickering, governmental bungling, OSHA regulations, law suits and environmental objections wouldn't make such a project all but impossible? In the 1930s, the Empire State Building was built in 410 days — more than 5 years after September 11, 2001, the World Trade Center site still features a gaping hole.

- Rich Lowry, columnist
Advocate, 6/13/07

Wind resistant residential construction

By Robert B. Anderson

Introduction

Residential construction was already subject to adequate wind resistant design specifications and practices prior to both the publication of the *International Residential Code*, and the event and aftermath of Hurricane Katrina. Unfortunately, a common problem has been that these practices were given little attention and even less compliance prior to these events. In the author's more than 40 years of residential design experience, it appears that the greatest resistance found to adequate wind resistant design and construction practices has been the residential builders. They cannot be easily convinced to even acknowledge the need for the construction techniques that are necessary to successfully resist wind damage and that are consistent with adequate wind resistant design practices.

Significant, first-hand, personal experience for practical wind design was gained by the author from the opportunity to observe the residential wind damage in the aftermath of Hurricane Betsy in 1965. The eye of this storm passed over the Avondale subdivision in suburban New Orleans. The observations of many common structural details exposed to the high winds demonstrated what did work, what did not work, and where the opportunities were for crucial improvements. The results were actually quite simple. The causes of the damage observed were as simple as 1, 2, 3...

- one — uplift
- two — lateral movement and
- three — overturning.

These load conditions are the basis of all the empirical design methods being used today.

As previously noted, compliance to the code requirements for wind resistant design has been relatively lax in the past. Even the regulatory agencies were unsure about what are proper design procedures and adequate construction details. It is believed that to successfully facilitate public safety through wind resistant design and construction, the engineering community should be both the forerunner and the source of the appropriate design procedures and construction details used in the education and practice of the designers, builders and the regulators of which all three are equally important in the process.

Where to Go? — Specifications

Since the beginning of 2006, Louisiana and many other states have adopted the *International Residential Code*. Its requirements may not have been accepted without a substantial amount of resistance were it not for the devastation during Hurricane Katrina caused by wind damage

to residences inadequately designed and constructed to resist the wind forces. The *International Residential Code*, in both its 2003 and 2006 editions, states specifically that residences shall be constructed in accordance with one of the following specifications:

- *ASCE-7 Minimum Design Loads for Buildings and Other Structures*
- *Wood Frame Construction Manual* - American Wood Council
- *Southern Building Code* - Southern Building Code International, Inc.
- *Prescriptive Method Standard* - American Iron and Steel Institute

The least common denominator of all of these publications is *ASCE-7 Minimum Design Loads for Buildings and Other Structures* (ASCE-7). It provides two basic approaches to wind design. They are

- testing and
- an the empirical method of using factors to modify the basic design wind pressure formula.

This basic design wind pressure formula is

$$F = 0.00256 V^2$$

where

F is the wind pressure on a surface in pounds per square foot and

V is the design wind speed in miles per hour.

For different conditions, the modifying factors (multipliers) applied to the coefficient of this



equation are both more than and less than unity. Therefore, do not become complacent in thinking that the wind pressure estimated by this basic formula is the worst case scenario. It is not! For example, the modifying factors applied to the corner conditions for uplift can be in excess of 2.

Simplified charts to obtain the design wind pressures with the modifying factors applied are available in the *International Residential Code* 2003 and 2006, the *Wood Frame Construction Manual* and the *Southern Building Code*. This is why they are cited in the *International Residential Code* as optional procedures to ASCE-7. Well tabbed and highlighted charts can be extremely useful if computer design software is not used. Also remember, most computer software does not necessarily give the whole picture. The responsible user engineer must be knowledgeable to select or verify the appropriate boundary

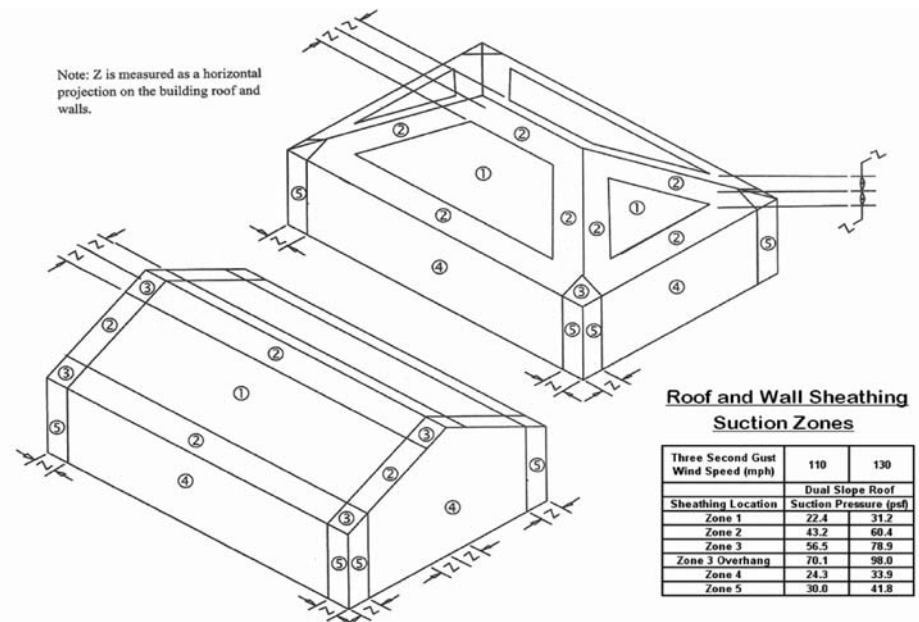


Figure 1. Roof and wall sheathing design wind pressure (suction) zones (ASCE-7)

Robert B. Anderson, PE is the Chief Engineer and President of Robert B. Anderson Consulting Engineers Company, Inc. a civil and structural engineering firm specializing in residential, commercial and industrial design with extensive experience in foundation and structural engineering, and remodeling. He has more than 40 years of experience as a professional engineer. Anderson earned his BS in Civil Engineering in 1965 and his MS in Structures and Soil Mechanics in 1969 from Tulane University. Anderson is a licensed engineer in Louisiana and 15 other states with extensive experience in the design and construction of residential and multi-family dwellings throughout the south. Anderson is nationally recognized as an expert in residential slab-on-ground design and construction. He was responsible for the first residential post-tensioned slab-on-ground design and placement in North America.

conditions to be applied in the design process. This requires the development and use of one's talent and experience in design and not just the indiscriminate operation of a software application.

How to do it? — Calculations

Pressure zones

The estimated wind pressures must be calculated essentially from all directions. The greatest

the corner and end conditions with their different and sometimes more congested details sustain the greatest wind pressures. For these reasons they demand more attention than the typical interior conditions away from these locations.

Estimated wind pressures on a residence are affected for example by height above the ground, topography, exposure, shape, gable pitch and whether roofs are gabled or hipped. Typically, computer design software does not cover all of the factors that are associated with design wind

ous and adequate load path to carry them from the roof — the point of application — to the foundation. In addition to the Main Wind Force Resistance System, separate tables are available for components and cladding. The tables found in ASCE-7 are generally the most accessible source.

Standard construction

If a structure is reasonably constructed with the correct philosophy for wind pressures and load paths to the foundation, it will most likely perform as it is intended. A combination of redundancy and composite action that may not have necessarily been considered directly in the structural analysis will benefit most responsible structural designs. This was confirmed in the aftermath of Hurricanes Katrina and Betsy when minimal damage was observed in most substandard construction. This does not give the engineer permission to be any less discerning, but only less paranoid about the use of standard construction. For this reason, it is a good practice according to the author's experience to provide building details that are easily constructed and inspected to reasonably assure their proper function.

How to do it? — Details and hardware

There are some typical structural details, practices and building hardware that have evolved and are currently being used in the author's residential construction practice. They are generally the minimum requirements in high design wind speed areas like coastal Louisiana and they are subject to modification to meet the more stringent requirements that may result from the actual structural design analysis.

Rafters

As previously discussed, loads must be properly transferred from the roof to the foundation for a combination of uplift, overturning, and lateral loads. If a roof is to be conventionally framed without trusses or *stick-built*, the first concern is the structure at the ridge. Ridge straps should be placed over the ridge from rafter-to-rafter as shown in Figure 4 to prevent separation at the peak. If this is not done, an alternate collar brace connection can be made that is also shown in Figure 4. Collar braces alone are not sufficient.

All rafters are connected to each other at the ridge and connected to the wall at the top plate as

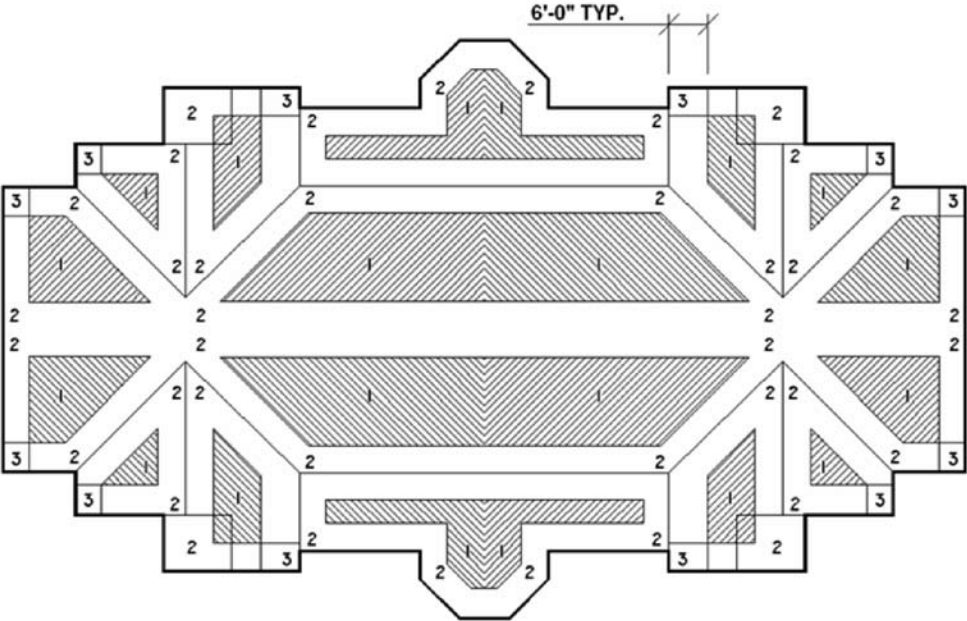


Figure 2. Roof design wind pressure (suction) zones (ASCE-7).

positive and negative wind pressures are retained for the zones on a conventional building as demonstrated in Figures 1, 2 and 3. As can be seen, end conditions and overhangs sustain the highest design wind pressures. Almost invariably, the negative pressures from uplift manifest the greatest wind pressures. A schematic diagram of the building with a load table along with the building hardware designations providing both the allowable loads and design loads is appropriate on structural drawings. The edge conditions such as

pressure. Synthesis subsequent to the analysis is imperative. For this reason, knowledge of the practical applications in the field are invaluable.

Load paths

An important factor not to be overlooked in the design development is the proper design and construction of the shear walls. All of the exterior walls are shear walls and it is often necessary to provide interior shear walls. ASCE-7 refers to the overall ability of the structure to withstand the loads incurred as the *Main Wind Force Resistance System*. Simply stated, the uplift, lateral and overturning wind loads must have a continu-

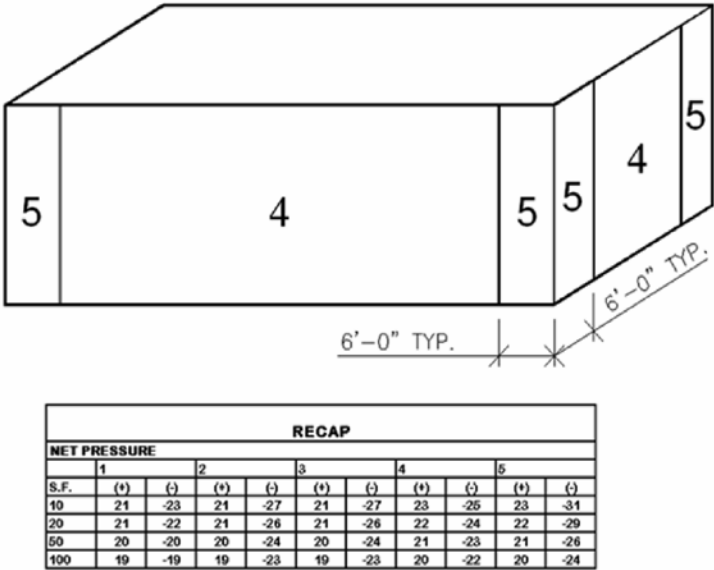


Figure 3. Wall design wind pressure (suction) zones (ASCE-7).

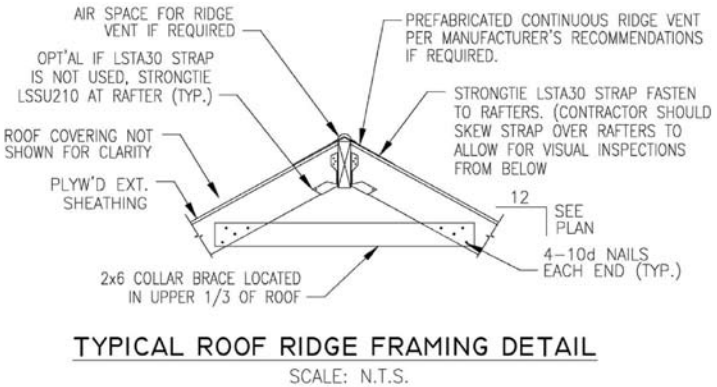


Figure 4. Typical roof ridge framing details.

shown in Figure 5. Remember, these connections must be able to resist the forces from both the uplift and horizontal loads estimated from the design calculations. The ridges and valleys in stick-built construction must not be overlooked. The rafters tying in at these locations must be strapped and be visible for inspection as demonstrated in Figures 5 and 6.



Figure 5. Rafter connection straps to the top wall plate shown in a corner and also shown are two threaded rods anchoring the top plate to the foundation.



Figure 6. Rafter connection made to the sheathing at a roof hip. Straps should also be connected to the valley sheathing

Anchors

Differences can arise as to how the uplift and horizontal loads on the roof are transferred through the structure. A personal and favorite approach to resist the uplift forces is to use threaded rods to anchor the top plate either side of all window and door openings, at the corners, and spaced at a maximum of 5 feet on centers.



Figure 9. Interior wall hold down unit with anchor bolts in the bottom plate equipped with 3" square oversize washers. U straps connect the studs to the bottom plate and the top plate (not shown).



Figure 7. Rafter connection straps to the top wall plate shown in a corner and also shown are 4 threaded rods through the top plate with 3" square oversized washers anchoring the top plate (not shown).



Figure 8. Bottom plate is shown with an anchor bolt equipped with a square, oversized washer and a threaded coupling to extend the threaded rod to anchor the top plate (not shown).

To provide sufficient uplift capacity to a 2x4 plate the anchor bolt and threaded rods shown in Figures 7 and 8 require a 3" square washer located at and bearing on the plate. The smaller, standard 1½" diameter round washer is not sufficient in bearing.

Trusses

If prefabricated, pre-engineered roof trusses are employed, more than likely the truss manufacturer will provide the reactions at their support points that are associated with the uplift and lateral wind loads on the roof and applied to trusses and transfer girders. Remember; these forces must be brought through a competent load path in the supporting structure all the way down

to the foundation. This can entail the use of interior wall hold down units as demonstrated in Figure 9.

Floor-to-floor load transfer

If threaded rods are used to transfer loads on 2-story structures, often there is difficulty with upper and lower floors lining up. However, continuous floor-to-floor transfer is imperative. Figure 10 demonstrates such details for an interior shear wall condition. Note that a continuous load transfer path is provided between the first and second floor with threaded rods passing through a second floor support beam.

Exterior walls

Load transfer from the roof structure to exterior shear walls often entails the use of either "U" straps to resist uplift as shown in the interior wall hold down unit demonstrated in Figure 9 or an alternate connection as shown in Figure 11. They are installed at the top plate and the bottom plate stud connections in the wall panel. An oversized sheet of oriented strand board (OSB) or plywood may be adequate for the shear transfer with nails provided at 3" on centers. For corner conditions this treatment is often insufficient, and "U" straps are still needed.

Note that at the bottom plate, anchor bolts as shown in Figure 12 are generally spaced at 30" on centers or closer, depending on wind speed and exposure. To resist the overturning moment, corner conditions may require a more substantial hold down unit such as the one shown in Figure 13. In this case, a Simpson hold down unit was used instead of the threaded rods.

A favorite design approach emphasized by the author is to nail and glue as shown in Figure 14 the plywood sheathing to the studs at all corners and other critical areas. Such a critical area is the interface between a first and second floor. Plywood or OSB should equally straddle the 2 floors and be nailed and glued to provide a continuous load path. Whether nailed and glued or simply nailed, continuity must exist at all panel edges with the use of solid blocking as shown in Figure 15. If the plywood or OSB panels are not glued, the nail pattern should be at 3" on centers on all exterior edges and at 6" on center elsewhere.

(Continued on Page 19)



Figure 12. The bottom plate anchor bolts are typically placed at 30" on centers.

Branch News and Leadership Forum

BATON ROUGE

By Robert W. Jacobsen, PE, President

The Branch annual holiday party was held December 7 at the Bocage Racquet Club. It was one of the most well attended in recent years. Members and guests especially enjoyed the evening's live entertainment provided by our own Russ J. Joffrion, PE. A big *Thank You* goes out to all our sponsors that make this annual event possible.

The recent activities of the Branch include

- securing and implementing 3 grants from the ASCE State Public Affairs Grant program under the leadership of Vice-President Jeff Duplantis
- conducting our annual LSU and Southern University civil engineering student scholarship program directed by Secretary-Treasurer

Adam Smith

- re-establishing the practitioner advisor roles at LSU and Southern with Branch members Samuel D. Amoroso, PE, and Dain R. Gillen, PE, who volunteered for these positions
- Adam Smith and Director Rudy Simoneaux attending the multi-regional Leadership Conference in Baltimore January 11-12, and
- holding our monthly luncheon on January 17, with Robert W. (Bob) Schmidt, PE, of HNTB speaking on the proposed Baton Rouge interstate loop project.

Branch news, activities, and monthly meeting announcements, continue to be posted on the branch website www.ascebr.org.

Changes in leadership

The Branch leadership welcomes 2 new committee chairs: Russell J. (Joey) Coco, Jr., PE, and Danielle R. Chabaud, EI. Joey will be serving as the Chair of the Membership Committee replacing Samantha E. Miller who recently moved to South Carolina. Samantha also previously served as the Branch Younger Member Committee Chair. Her contagious enthusiasm was a tremendous asset to the Board and will be missed. Danielle will be serving as the Chair of the Younger Member Committee. She has had previous service as a vice president of the LSU ASCE Student Chapter. We also welcome back Clinton S. (Clint) Willson, PE, our Education Director who was on sabbatical in Switzerland this Fall.

Baton Rouge Branch attracts a 2008 SPAG

By Jeffrey L. Duplantis, PE

The success of the Branch's 2006-2007 public relations effort, funded in part by the national ASCE State Public Affairs Grant (SPAG) program, encouraged the Branch Board to develop and submit 3 proposal applications for 2008 SPAG funding. The first SPAG application was for a 2008 Engineers Week billboard advertisement. It was agreed that the focus should be on one digital billboard display on interstate route I-10 near its intersection with College Drive in Baton Rouge. This location was selected because it provides the highest visibility to commuters in the highest traffic volume corridor in the Baton Rouge region.

In 2006 the Branch Board submitted an application for a SPAG to fund two billboard advertisements during National Engineering Week in 2007. A vinyl billboard advertisement was displayed on the interstate route I-12 near its US 61 (Airline Highway) interchange in Baton Rouge, and the same advertisement was displayed on a digital billboard located on interstate route I-10 near its intersection with College Drive in Baton Rouge. Both of these billboard locations were selected to provide high visibility to the commuters in the highest volume corridors in the Baton Rouge area.

In its second SPAG application, the Branch Board proposed to use the video titled *Zoom into Engineering* previously prepared by the Acadiana Branch to reach the elementary and middle school students and their parents in Baton Rouge region. The Branch plans to run this video on local cable television channels during Engineers Week — February 17-23, 2008. It is the goal of the Branch and this video to inform these students and their parents and thereby attract future generations of civil engineers who may not otherwise consider the profession as a viable career choice.

Unfortunately, many young people and/or their parents do not know or understand what civil engineering is or what civil engineers do. This video highlights some of the many fields and opportunities associated with civil engineer-

ing thereby satisfying the Branch's objective to place the term civil engineering into the mainstream of public discourse and make it a household word. This opens opportunities for students who may otherwise never hear of or appreciate civil engineering as a profession. It comes at a critical stage in their education when they need to consider and begin preparing for an education and career in civil engineering.

It is believed that this 30-second video can influence the career choice of many capable, young people and thereby significantly affect the civil engineering profession.

In the third SPAG application, the Branch Board proposed to sponsor part of a local community program. In 2006, 53 percent of 4th graders in East Baton Rouge Parish failed the Louisiana Educational Assessment Program



Jeff Duplantis presents the check forwarding the SPAG allotment to fund in part the EveryOne Counts Program to Judy Bethly, Executive Director of Volunteers in Public Schools, (center) and Tracy Portle, Volunteer Director of Volunteers in Public Schools.

Although it will be difficult to objectively measure the success of this program, the video will necessarily reach the audience anticipated — those potential engineers who may realize what they can aspire to once they see the video.

(LEAP) standardized test indicating they do not have the grade-level basic math skills expected. Further, the Council for a Better Louisiana finds that Louisiana employers have the most trouble

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NEW ORLEANS

By Ronald L. Schumann, Jr., PE, President

National ASCE Conference

The Branch leadership has been busy over the past few months engaged in numerous activities in service to its membership. Beginning with the ASCE National Conference held in Orlando, Florida this year. I had the privilege and honor of representing the Branch during this conference. Its theme was *Infrastructure for all Generations: Plan-Design-Build-Manage*.

Branch member and Past President Deborah Keller made a workshop presentation during the National Conference titled "Prepare, Mitigate, Respond, and Recover: Engineers' Involvement with Local Disasters." Deborah made her presentation based on her first-hand experiences and the lessons she learned during Hurricane Katrina and dealing with its aftermath from her position as an engineer and the Director of Port Development for the Port of New Orleans. Deborah was able to provide valuable insight into the things engineers responsible for the operations and maintenance of vital infrastructure can do in advance to prepare for potential disasters that can facilitate their ability to respond and recover when a disaster strikes.

I attended a session on a Conference program titled "Liquid Assets." Liquid Assets is a documentary and outreach program being produced by Penn State Public Broadcasting and sponsored by the ASCE. It aims to educate the public on the condition of the drinking water supply, wastewater treatment and the stormwater infrastructure in the United States and promote community action for the needed improvements. The goal of the Liquid Assets project, scheduled

to debut in 2008, is to raise public awareness of the nation's potable water and wastewater systems and their vital role in protecting public health and supporting economic prosperity. The ASCE hopes to use the Liquid Assets project as a resource to help civil engineers and related professionals plan and conduct effective community outreach programs focused on needed infrastructure improvements.

I also attended the Council of Presidents meeting that provides the opportunity for section and branch presidents to obtain information and engage in discussions regarding national ASCE initiatives and leadership. In conjunction with the National Conference the Region 5 Board of Governors held a workshop for Region 5 section and branch representatives where they were invited to participate in a discussion to identify and/or define the role and responsibilities of the Region 5 Board of Governors to function as a conduit between National ASCE organization and the sections and branches in Region 5.

Multi-regional Leadership Conference

Ben Cody represented the Branch at the multi-regional Leadership Conference in Baltimore Maryland. The Branch also sponsored 6 students from the University of New Orleans Student Chapter to attend the Conference to participate in the Student Chapter Leadership Workshop. The attendance of the rising leadership of the Branch and its student chapter at these conferences is important for networking and exchanging of ideas for — and experiences that have been effective in — better serving our

members and the profession. They also serve to encourage the continued participation and the development of future leaders the ASCE.

Branch website

The Branch is in the process of changing the management and operation its website. The Board of Directors decided to completely overhaul the website in the way it is operated. The maintenance and development of the contents of the Branch website currently relies on an outside website technology company. Every time information is posted to the website, or its content is either managed or updated the branch pays a fee to the website technology company that manages the site.

Recent developments in website software provides the opportunity to change the way the Branch website is managed and operated by using a *content management system*. This will allow designated members in the Branch to easily place content, calendars and other information related to various Branch programs and committees on the Branch website without going through the website technology company.

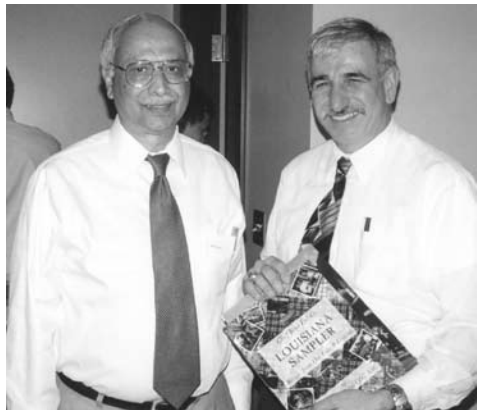
An open invitation

As always the Branch Board of Directors is interested in hearing from Branch members and encourages their regular communication and feedback related to the member services provided and any proposed. Please feel free to contact any of the Branch leadership and you have an open invitation to contact me at Ronald.Schumann@dmjmharris.com with any questions, comments or ideas how we may better serve you.

ASCE-SEI New Orleans Chapter

By Om P. Dixit, PE

It is a tradition for the Chapter to support New Orleans Regional Science Fair and MATHCOUNTS competitions. To encourage more and better structural engineering related projects in the Regional Science Fair this year, the Chapter has approved an increase in the 1st and 2nd place project prizes of \$150 and \$100



Chairman, Mike Choudhry (left) presents a commemorative gift to guest speaker Ronald O. Hamburger following his seminar presentation on the "IBC Seismic Requirements" that was made on November 29, 2007.



Tom Smith introduces the speakers for the 1st Annual Herbert T. Roussel, Jr. Marine Seminar.

respectively in both the junior and senior divisions. Beginning this year the Chapter will also award additional \$100 to the sponsoring school teachers in each division. This is intended to encourage the students and their teachers to be more selective in choosing good engineering projects for future competitions.

The Chapter has always appreciated the sponsorship of civil engineering department of the University of New Orleans for providing the university's facilities for the seminars it sponsors. As you are aware Tulane University closed



SEI Chapter past Chair (2007), Jim Danner receives a commemorative gift certificate for his past service from current Chapter Chair (2008) Mike Choudhry.

its civil engineering department and as a result it graciously agreed to donate the load testing equipment that was owned by its civil engineering department to the UNO civil engineering department. The Chapter expedited and made possible the transfer of this load testing equipment from Tulane University to UNO by providing the funds up to \$5000 that were immediately needed and required to dismantle, transport and install this equipment in its new location on the

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ranch leadership has been in full swing in preparation to host the upcoming 2008 Section Annual Spring Meeting and Conference scheduled to be in Lafayette. The Conference will be housed in the Louisiana Cajundome Convention Center and it promises to offer some unique learning opportunities. Subjects of interest in every sub-discipline of civil engineering will be offered during the Conference spanning the application of new technologies, to improvement of personal leadership skills, to a comprehensive discussion about the proposed changes that the ASCE has supported and developed (*body of knowledge*). The BOK is a plan to advance the educational

requirements for the graduate civil engineer that will comprehensively affect the civil engineering curriculum and the graduate civil engineering student's preparation for entry into the profession and a licensed engineer.

Student awards developed

The Branch is involved with developing scholastic awards for Junior and Senior civil engineering students who are matriculated at University of Louisiana at Lafayette and at McNeese State University. These cash awards will be available to students who maintain a 3.5 grade point average in their engineering classes

and possess the traits becoming of a professional engineer. Junior and Senior students attending each school interested in applying for one of the awards will be required to submit a completed application. One Junior and one Senior student from each civil engineering department will be selected for the awards. The selected Junior students will receive a \$200 award each and the selected Senior students will receive a \$300 award each. The award recipients will be recognized and presented with their awards during the Branch March general membership meeting and luncheon.

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finding workers with basic math and problem-solving skills. To produce future civil engineers, our public education system must prepare its students with these same skills. Volunteers In Public Schools (VIPS), working with its many community partners, created the *EveryOne Counts* program to facilitate the development of basic math and problem solving skills in the student population.

The *EveryOne Counts* program pairs adult volunteers — *Math Friends* — with children who have a demonstrated need for assistance. Math Friends provide individual, hands-on

learning to build a student's confidence and improve math skills. VIPS trains the Math Friends volunteers to use the materials provided in a math kit to aid the students in tangibly interacting with mathematical concepts. The kit includes learning aids such as a clock, ruler, number lines, dice, dominoes, counters, cards and play money.

The Branch requested funds to purchase math kits and assist with the cost of training the adult volunteers. With the grant, it is estimated that the Branch can provide at least 30 qualifying students with a math kit and a Math Friend vol-

unteer as part of the VIPS program. This will provide those students in the Baton Rouge area that need help with a foundation in math and science that they may not otherwise receive. Through this combined effort with VIPS, the Board believes that the Branch can make a sizeable contribution to the community and help some very deserving children.

The Branch requested a total of \$7000 in SPAG funds and received all but \$500 of the requested total. The Louisiana Section will provide the \$500 balance to reasonably ensure that the 3 proposed programs will be executed.



This graphic was developed for a billboard display scheduled to appear on a digital message billboard during Engineers Week in the interstate I-10 corridor in Baton Rouge. It is part of the public affairs project proposed and developed by the Baton Rouge Branch and that will be partially funded by the national ASCE State Public Affairs Grant program.

Did you know...

...that a patent for an invention is a grant of property rights to the inventor and is issued by the U.S. Patent and Trademark Office?

...that a patent confers to the owner the right to exclude others from making, using, selling, offering for sale and importing the patented invention?

...that for an invention to be patentable, it must be *novel, useful and nonobvious*?

...that practically everything novel made by man is patentable except the laws of nature, physical phenomena and abstract ideas?

...that the duration of a patent is 20 years from filing?

...that patents are freely assignable, and individual rights(making, using or selling) may be licensed to any number of parties?

...that it is very important for inventors to keep an inventor's notebook to show dates of conception and to complete an invention disclosure form having the information needed to draft a patent application.

Source: Steve A. Witters, PE, Esq.
(licensed patent attorney)
Middleton Reutlinger, Louisville, Ky.
PE 7/07

...that the state of Alabama licenses approximately 13,000 engineers — the same number of engineers licensed in Louisiana? In Alabama, 4 of the 5 members of its licensing board are engineers who serve a 5-year term compared to 9 of the 11 members on Louisiana's board who are engineers who serve a 6-year term. In Alabama, a nominating committee consisting of an alphabet soup of 7 or more engineering society affiliates in Alabama is assembled to nominate 3

candidates to fill a vacancy while in Louisiana a practice division of the Louisiana Engineering Society assembles an unspecified nominating committee to nominate 5 candidates to fill a vacancy. In Alabama, 3 engineer members are selected from the civil, mechanical and electrical engineering disciplines each and the 4th member is selected from either the mining or chemical engineering discipline in alternate terms. In Louisiana there are two engineer members each representing the Louisiana Engineering Society practice divisions of education, industry, government and private practice, and one representing the construction practice division. Though not required, in Louisiana it is attempted to attain regional distribution and a broad range of technical disciplines on the licensing board. Note that the Alabama licensing board is considering proposing legislation to enlarge its number to 7 of which 5 would be engineers.

SHREVEPORT

By Rusty L. Cooper, EI, President

The Branch Board was recently made aware that the Branch has reached its 55th anniversary in service. This is a great milestone in the history of our branch, and as such it should be celebrated. My fellow officers and I are currently planning events to celebrate this event and more particularly to recognize the contributions our



Todd Henry

members have made to create and perpetuate this successful branch.

We recently filled the vacancy in the office of President-Elect on the Branch Board of Directors with Todd E. Henry, PE. Todd is employed by Alliance, Incorporated and as he joins the elected leadership of the Branch, I look forward to his support and I hope that he finds the same enjoyment in service to the Branch during his tenure that I have experienced in mine. We are glad to have Todd who is an experienced engineer, take the initiative to join the elected leadership of the Branch. The Branch Board has been referred to by some of its own as the Branch's built in Younger Member Committee. I hope that Todd has set an example that will be continued in the future.

In January, the Branch's Treasurer Daniel Thompson and Secretary Eric attended the ASCE multi-regional Leadership Conference in Baltimore, Maryland and represented the Branch. I am sure it was a rewarding experience for them and an opportunity to compare branch activities, member participation, experiences and ideas with the representatives from the other branches in attendance. I hope they were able to bring from the Conference some valuable tools for

increasing membership numbers and participation, and a better understanding of the relationship between the branch, section, and national ASCE organizations.

Also in January, Louisiana Tech University hosted its Civil Engineering Winter Awards Banquet in Ruston. The Branch showed its support by awarding 2 scholarships to the Outstanding Junior and Outstanding Senior students in Civil Engineering at Tech. Congratulations to Callie E. Hernandez, named Outstanding Junior, and Jonathan M. Guy named Outstanding Senior. On behalf of the Branch I wish them good fortune in their future endeavors.

May I encourage all students looking for job placement to get in contact with the local branch leaders in the areas you are interested in seeking employment. I am sure they would be happy to assist you in gaining a feel for the area and provide insights into the job market. I would also encourage all recent civil engineering graduates to begin and/or continue the process to become a licensed engineer, join or continue your membership the ASCE and get involved with your local ASCE branch leadership. It will most certainly help you in networking and in your ongoing professional development.

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UNO campus. An Executive Committee member and a member of the civil engineering faculty at UNO, Norma Jean Mattei, PE, was instrumental in working out the details between the universities and the Chapter.

Since the previous Chapter report provided in the November issue of this journal, the Structural Engineering Institute New Orleans Chapter hosted the following seminar in New Orleans:

11/29/07 An Introduction to the IBC Seismic Requirements for Southeast Louisiana

It was presented by Structural Engineer, Ronald Hamburger. He provided the basic IBC requirements for Seismic Design followed by calculation of the required parameters for 2 example building design cases for southeast Louisiana. There were over 85 members in attendance surprising even the speaker by the large attendance for a geo-

graphic region that requires the minimum for seismic design of structures.

The planned topics and presenters of the future seminars to be hosted by the Chapter are

2/13/08 New Developments in Prestressed Concrete Piles

Don Theobald, PE, Gulf Coast Pretress, Ocean Springs, Mississippi will be our speaker.

4/10/08 Structural Engineer or Technicians? Annual David Hunter Lecture:

The presenter will be Edwin T. Huston, PE with Smith & Huston Inc. Consulting Engineers, Seattle, Washington.

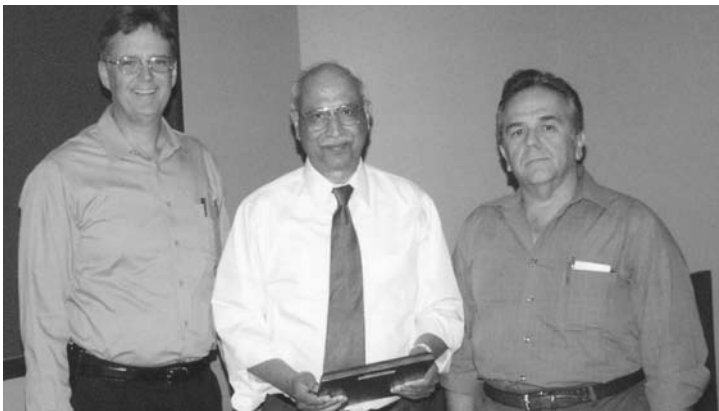
Additional seminars are being planned on the subjects of

- Local Building Officials requirements (June)
- Project Management (August)

- Marine Design (October), and
- Construction Management (November).

More details about these seminars will be posted on the New Orleans Branch website as they are finalized. The Executive Committee of the Chapter is continuously seeking good topics and speakers for future presentations. Members with expertise in any of the above areas are welcome to join the Executive Committee. To offer any suggestion or to join the Executive Committee please contact Committee Chairman Mahboob A. (Mike) Choudhry at Mike.Choudhry@URSCorp.com.

All seminars are held on the campus of the University of New Orleans. Seminar dates, pertinent information, and registration are posted on the New Orleans Branch website www.asceneworleans.org. To add your name to our mailing list, email your request to Om Dixit om@fenstermaker.com.



Mike Choudhry (center) presents the commemorative speaker's plaques for Herbert T. Roussel, Jr. Marine Seminar to Joseph E. Jacquat (left) and Gil Chatagnier (right) of Lanier and Associates following the Seminar.



A portion of the audience attending the seminar on the "IBC Seismic Requirements" in UNO's Kirschman Hall November 29, 2007.

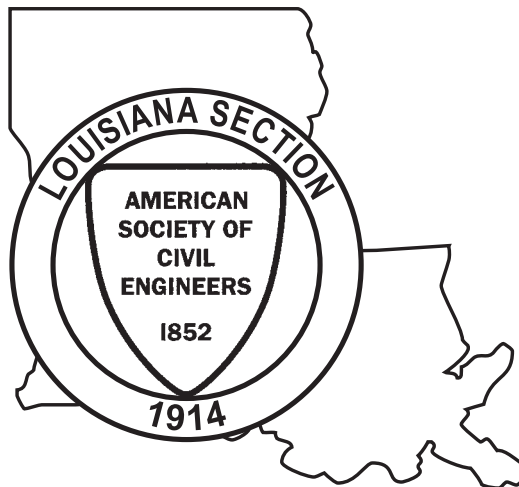
Louisiana Section 2008 Annual Spring Meeting and Conference May 16 - 18, 2008

**Hosted by the Acadiana Branch
Cajundome Convention Center
444 Cajundome Boulevard
Lafayette, Louisiana**

Complete Information On-Line at:

<http://www.lasce.org>

- **Conference agenda and technical sessions**
- **Registration form**
- **Sponsor and exhibitor application form**



STUDENT CHAPTER NEWS

University of Louisiana at Lafayette

By Amy Henschke, Secretary

The Chapter had a successful Fall semester with several informative meetings, social gatherings, and projects. The Chapter organized a volunteer project with Habitat for Humanity. Several members participated in this project by working at one of the construction sites for a day. The Chapter volunteers helped to put shingles on the roof of a house that was being built for a family displaced from their home by Hurricane Katrina. Our volunteer members enjoyed this opportunity to provide a service to the community and the Chapter looks forward to offering its services again in future projects.

The Chapter scheduled a joint meeting with the Institute of Transportation Engineers student

chapter featuring guest speakers from the Lafayette Consolidated Government's Traffic and Transportation Department. Tony Tramel, Director, and Travis Smith, Traffic Engineer, discussed the city's new automated enforcement systems referred to as *Safe Speed* and *Safe Light*. These systems, are intended to detect and report speeding and red light running violations respectively. The members of both chapters attending were very interested in this controversial subject and they participated in a lively question and answer session following the presentations about this attempt to promote safer streets in Lafayette.

The Chapter's last meeting of the Fall semes-

ter featured a presentation by graduate student Boone Larson. He discussed an internship research program that he completed over the summer with NASA. Larson encouraged both undergraduate and graduate students to consider participating in the program as an excellent way to gain experience in their field of study.

Preparations are still underway for the Chapter to participate in the Deep South Regional Conference scheduled in April. The Chapter has set goals to participate in the Steel Bridge, Concrete Canoe, Surveying, and Student Paper competitions. With the start of the Spring semester, Chapter members plan to continue the work required to achieve these goals.

LSU

By Amanda Hamlin

The Chapter will host the Deep South Conference of ASCE student chapters in Baton Rouge beginning April 3, 2008 and lasting through April 5, 2008. We anticipate that we will welcome to the capitol city the 11 student chapters in the Conference's region that are from all of the civil engineering departments in the Louisiana Section and some of the civil engineering departments in the Arkansas, Mississippi, and Tennessee Sections.

This 3 day conference is an annual event that brings together the member student chapters from the Deep South Conference region. The Conference provides the opportunities to network through the planned meetings, social events and an awards banquet scheduled on the final evening, and to compete in the planned events that include the concrete canoe construction/races, steel bridge construction/erection, surveying and a student paper presentation. There are also other competitions planned such

as the concrete frisbee and the mystery event.

Our Chapter has been, and will continue to be, very busy in the preparations to make the 2008 Deep South Conference a success! Our to-do list so far includes making conference hotel reservations, securing locations for the competitions, and planning the meals for between 200 and 300 people. But this is just the beginning.

We will also need to rely on the support of the local civil engineering community. If you are interested there are two main services that the Chapter will need to successfully host the Conference. First, civil engineers are needed to donate their time to act as judges for the planned competitions. Second, corporate sponsors are needed to support some of the Chapter's costs incurred in sponsoring this event. The Chapter has developed different levels of sponsorship with advertising opportunities associated with each level and we are more than willing to work



with a sponsor interested in sponsoring a certain event or aspect of the conference. If you or your company is interested in contributing to the Chapter's hosting effort, please contact Amanda Hamlin ahamli2@lsu.edu or Claire Murray cmurra4@lsu.edu.

Louisiana Tech University

By James S. Ellingburg, President

Chapter members have been pretty active over the past few months. We kicked off the year with the Meet and Eat. This is where our students get to interact with the new faculty in a social setting and let each other know how they spent their summer months. The Chapter also hosted companies during membership meetings that included Pate Engineers, InfraSource, and Crest Industries.

The Chapter's annual winter banquet January 23 was the event where several students received scholarships that were announced during the banquet. The Shreveport Branch provided scholarships for the Outstanding Junior and the Outstanding Senior students and this year's recipients were Callie Hernandez and Mitch Guy, respectively. The Chapter also takes

the opportunity during the banquet to recognize exceptional civil engineering professors who challenge us over the past year. Recognition this year went to Professor Luke Lee the recipient the Chapter's Professor of the Year Award and to Professor Ralph Gabriel the recipient of the Chapter's Crying Towel Award.

Future plans of the Chapter include participating in the meeting of the Deep South Conference of ASCE student chapters. It will be hosted by the Louisiana State University ASCE Student Chapter on the LSU Baton Rouge campus. We plan to compete with the other participating chapters in the concrete canoe, steel bridge, and Daniel Mead paper competitions that are planned during the Conference meeting. Our concrete canoe team

has made great strides over the past year and it has finished building the practice canoe for this year's competition team. The competition canoe will be built in the coming weeks. The steel bridge team has completed the design of the bridge and is now waiting the material to begin its fabrication.

Our chapter has made great strides this year in its membership drive. As a result, we witnessed our largest ever chapter meeting in December with over 100 people in attendance. We have plans to hold the election for Chapter officer in late March or early April. Planning has begun for our annual golf tournament and fund-raiser. Information about the event will soon be available on the Chapter's website <http://www.latech.edu/tech/orgs/asce/>.

By Mallory Anne Davis, President and Yelena Rivera, Secretary

In the Fall the Chapter, in conjunction with the New Orleans District of the Army Corps of Engineers, conducted a field trip to the interim pumping stations at both the 17th Street Canal and London Canal. Students from all engineering disciplines were invited and encouraged to attend. The students in attendance observed one of the technicians monitor and activate several pumps to demonstrate the pumping capabilities provided.

November 30, 2007 several Chapter members volunteered with *Jumpstart UNO*, a group that provides mentors for young children at Nelson Charter Elementary School. We assisted in planting flowers, painting hopscotch, and turning old tires into seats to create a fun play yard for the preschoolers. On completion of the playground, several of the school children were brought out to help paint their mascot's footprints on the ground.

Before the start of the 2008 Spring semester, a delegation of 6 Chapter members attended the ASCE Workshop for Student Chapter Leaders held in Baltimore. The purpose of this workshop is to teach important leadership skills and to form relationships between the student chapter members and their advisory personnel in attendance during the Workshop representing the various civil engineering departments from the colleges and universities. Younger members and faculty advisors were present to learn and to aid student chapter leaders by providing helpful tips and sharing their experiences.

To increase student participation in the ASCE, the Chapter plans to host more social events. The first of these was a tailgate party before the January 23 men's basketball game.

Other events such as movie nights, icebreakers, and fun field trips are also being planned for the upcoming semester.

Chapter members are all looking forward to the 2008 Deep South Conference of student chapters to be held April 3-5 in Baton Rouge. We are in the process of completing the mold for the competition concrete canoe and testing several concrete mix designs. Our steel bridge design team is finishing the final analyses before construction begins.

The Chapter is always seeking to forge closer relations with the various local engineering firms. Their practitioners are regularly invited to our regular chapter membership meetings to speak and the Chapter would like to have the opportunity to host practitioner speakers from the other engineering firms that are interested and have yet to participate. One of the main goals of the Chapter is to aid in reestablishing the University of New Orleans as a leading school in civil engineering.



The University of New Orleans Student Chapter delegation that attended the Workshop for Student Chapter Leaders in Baltimore pictured in the top row from the left are Josh Hutchinson, Treasurer; Jeremy Pagoda, Concrete Canoe Captain; Mallory Davis, President and Richard Morris, ESCLC ASCE Representative; and in the bottom row from left are Chuck Williams, Student Government Representative; and Jenni Schindler, Vice-President.

- Observations -

Ethics: A session featured during the 2007 Louisiana Civil Engineering Conference and Show titled with the question *How ethical are political contributions by engineers?* was opened with a brief presentation of some of the federal laws and rules governing political contributions. This left the bulk of the session open for an invited audience discussion. The session then became interesting. The issue appeared to make everyone who participated in the discussion squirm a bit defensively just as those of us who did not participate. I suspect that political contributions made by engineers who compete for government contract services is a conscious act and clearly a conflict of interest. While one's apparent motive may clearly be to promote good government, the effect of the contribution left the most conscientious participants ambivalent knowing there can be — though beneficial — unintended consequences to their competitive edge. Some took heart believing that political contributions within the legal limits make them too small — by more than an order of magnitude — to have any influence by comparison to what it once cost in a less regulated time to attract a favorable outcome.

Honors and awards: I could not help but notice one qualification in a recent announcement for a new ASCE/ASFE sponsored national award, *The Professional Practice Ethics and Leadership Award*. ASFE, Inc. was originally the Associated Soil and Foundation Engineers but this name was dropped. It is an organization of geotechnical and related businesses with a mission to identify the causes of professional liability claims and losses and to develop programs and materials to help avoid such exposure. The qualifications for a candidate for the award go on-and-on with the usual fluff until the eye popping, "...the individual may not currently serve on, or within five years of the nomination date, the ASCE Board of Direction or the ASFE Board of Directors." It did not escape my notice long ago that the honors and awards conferred on engineers/members by the Louisiana Section and the Louisiana Engineering Society often seem to be merely passed around by their active leaders to each other. Their candidates' qualification would seem to be; *Preferably, a individual currently serving — or having served within five years of the date of nomination — on the board of directors of...* I have seriously

questioned this practice. On both occasions, the elected leaders — and prospective honors and awards candidates — held that if they are otherwise qualified for an award why should they not consider themselves? It was additionally held that the Societies' leadership was a pool of the *best* candidates. I believe that these are not acceptable reasons but very thin excuses to avoid making the effort it would take to seek out viable nominations outside of the conflict of interest the elected leadership creates for itself. The only legitimate exception raised was an award like the Outstanding Young Civil Engineer Award with a 35-year upper age limit. A younger member in the leadership and otherwise a viable candidate could be disqualified for life. On the other hand, I do not understand why it is not very uncomfortable for our society leaders to nominate and approve themselves for awards when a 100 or more ASCE members and possibly several 100 civil engineers in our community are qualified. - Editor

Section News and Information

Highlights of the October Board of Directors meeting

The Baton Rouge Branch was the only branch in the Section to develop and submit a proposal for the national ASCE 2008 State Public Affairs Grants (SPAG) program to the Section to be considered for funding. The Baton Rouge Branch SPAG proposal describes a multifaceted program that includes

- zoom into engineering similar to that previously pursued by the Acadiana Branch
- purchasing a bill board advertisement during engineers' week on the digital billboard located in Baton Rouge on I-10 near its intersection with College Drive
- supporting the local *Volunteers in Public Schools* — a mathematics and science tutoring program

The New Orleans Branch may submit a SPAG proposal before the deadline for the children's booth that it operates annually during the New Orleans Jazzfest as part of its outreach activities.

The selection of a candidate to represent the Section during the national ASCE Leadership Training in Government Relations program often referred to as the *Fly-in* was discussed in detail. The program is intended to develop experienced and effective constituent participation in the legislative process at the state and federal level and thereby effective participants in the ASCE's Key Contact program. It was generally agreed that first priority should be given to the Section's elected leadership that may have a particular interest in developing these abilities.

There was a discussion about a contribution by the Section to the Bobby Price scholarship fund being established by Louisiana Tech University for the purposes of establishing an endowed chair in its civil engineering department.

It was decided to make a \$1500 contribution to the fund on behalf of the Section and submit it concurrently with a resolution adopted by the Section Board honoring Price's career and service to the profession.

The University of New Orleans civil engineering department has been given the opportunity to take possession of any of the laboratory equipment available that belonged to the now defunct Tulane University civil engineering department. The large load testing equipment available is of particular interest. It is superior to — and newer than — the equipment currently owned and operated by the UNO civil engineering department and that was compromised by the flooding that occurred during Hurricane Katrina.

This equipment must be decommissioned, transported to its new site and recommissioned and calibrated by the manufacturer at an estimated cost of \$17,000. Further, Tulane University needs the laboratory space it occupies cleared by November 9, 2007. The Section Board was approached to donate the cost of the move. There was an extensive discussion about the eligibility for FEMA funds that could substantially supplement the cost and reduce the Section's donation. However, the extensive red tape involved in actually getting FEMA funds and the Byzantine university/state policies regarding funding appear to make it impossible for the Section to be reimbursed for any of the total amount that is needed immediately.

To possibly reduce the initial estimated costs to minimize the Section's donation, a further investigation will be made. It will be to determine if the equipment can be decommissioned, transported by others (cost donated) and moth-

ballled until FEMA funds become available.

Norma Jean Mattei, Region 5 Governor representing the Section, advised that the Region 5 Board of Governors is attempting to invent itself by seeking through the Governors, to define the needs of their sections that may be reasonably served by the Board of Governors. For this reason she was soliciting suggestions from the Section Board concerning potential functions for the Region 5 Board of Governors. Some initial thoughts were to form a regional speakers bureau and establish contacts with members of Congress concerning regional issues. Mattei has been nominated for the office of Vice Chair of the Region 5 Board of Governors.

In other matters, preparation toward establishing a special committee to proceed with developing a proposed strategic plan for the Section is underway. Past Section presidents Timothy M. Ruppert, PE, and Barbara E. Featherston, PE, have been appointed as the special committee to update the Operating Guide for the Section Board of Directors. Plans to develop a disaster response plan for the Section are being considered to reasonably assure its survival and continuity. An effective strategy to increase advertising and professional listings in the Section journal is being considered.

Editor's note: These highlights are reported here from the notes that I take during the Section Board of Directors meetings when I attend. The full, approved minutes of each Section Board of Directors meeting and each Section membership meeting are posted under the Operations menu item on the Section website.

Highlights of the December Board of Directors meeting

The Section's participation in the national ASCE State Public Affairs Grant (SPAG) program was discussed extensively noting that the Baton Rouge Branch is in the early stages of developing the planned activities that were submitted as the Section's proposal. In anticipation or hope of receiving some unknown portion of the funding requested from the national program, the Branch presumed that the Section would, as usual, pick up the entire difference in the cost it will incur. There was some concern expressed about this presumption.

The branches are in ways an integral part of the Section and not entirely separate entities in the sense that the surplus funds of the Section that are mostly generated from Section dues income are regularly prorated and distributed to the branches along with all of the Section's national allotment from national dues income. The question was whether it is appropriate for the Branches to assume some of the costs of their own programs such as participation in the SPAG program or whether the Section's general funds should be used exclusively to fund such program activities. This is in a way paying for some

branch programs up front before the Section's surplus is declared and distributed.

At one time branches were competing for surplus Section funds with proposals for local programs. It was later decided that this was not acceptable and to simply prorate the surplus Section funds giving the Branches the opportunity to develop opportunities to use the funds they received. There has been recent concern that the branches are accruing relatively large cash reserves rather than spending the resources they have on member services. Funding branch programs from the Section's general funds prior to the distribution of its surplus funds may be somewhat of a selective return to the competition for Section funds.

Each year, SPAG applications are encouraged, solicited and coordinated through the Section's leadership from each of the branches. The Section's annual SPAG application is developed from this result. There was a modest surprise this year when a SPAG application was made directly to the national ASCE by an individual in a branch's leadership who was not familiar with the process. Part of the surprise

was that the application was independently received and acknowledged by the national ASCE.

The Section's attempt to identify a Younger Member Committee chair has been unsuccessful. An early prospect was unable to accept the role because of the restraints imposed through her employment limited her ability to meet the expectations placed on the Section Committee chair. Another prospect for the Committee chair was identified and will be approached.

It was reported that the New Orleans Chapter of the Structural Engineering Institute funded the initial and immediate effort required to move the structural testing equipment in the Tulane engineering laboratories to the engineering facilities at the University of New Orleans. This testing equipment would have otherwise been simply disposed of for its salvage value. To move this equipment and preserve its integrity in the move, it must be decommissioned, recommissioned and calibrated by qualified factory representatives. The estimated cost for the entire sequence of events is approximately \$17,000.

(Continued on Page 19)

Section proposals attract grant

The Section was notified by letter dated December 14, 2007 that its \$13,900 in grant proposals for the ASCE State Public Affairs Grant (SPAG) program were eligible to receive partial funding up to \$12,500. The Section's proposals that were funded by the SPAG program are:

Baton Rouge Branch:

- *EveryOne Counts* - Tutoring program (\$1,500 requested) \$1,500 awarded
- *Zoom Into Engineering* video (\$1,500 requested) \$1,500 awarded

- Engineers Week billboard (\$4,000 requested) \$3,500 awarded

New Orleans Branch:

- Hurricane season billboard (\$6,900 requested) \$6,000 awarded

The Section received an initial payment of \$7,500 with the notice. The remaining \$5,000 of the funds obligated will be due provided the proposed programs are completed and a final report is submitted by the Section concerning the

funded programs and received by the national ASCE deadline. The Section agreed to pay the \$1,400 unfunded balance to the respective branches to cover their total grant request.

The Baton Rouge Branch had already begun the preliminary development of the art work for its proposed Engineers Week billboard. This was done by commissioning the graphics to be developed by the same outside advertising firm it plans to contract with to provide the digital billboard display space during Engineers Week — February 17-23, 2008.

Bobby Price honored at reception

Section member Bobby E. Price, PE, was recognized by the Section and more particularly the members of the Shreveport Branch — his home branch — who hosted a reception in his honor October 25, 2007 in Ruston on the Louisiana Tech University campus. On June 4, 2007, Price was elected by the ASCE Board of Direction to the membership grade of Honorary Member. The ASCE is in the process of renaming this membership grade the Distinguished Member. This membership grade is the highest distinction that the ASCE confers on a member and it is reserved for those members who have attained acknowledged eminence in a branch of engineering or its related arts and sciences.

James D. Nelson, PE, Associate Dean of the

College of Engineering and Science at Louisiana Tech University who participated in the ceremonies took the opportunity to outline Price's many significant accomplishments and contributions to the civil engineering profession and to his community. The accomplishments and contributions enumerated by Nelson clearly exemplify the reason that Price was elected by the Board to ASCE Honorary Member. Honorary Members are among a very select group of 565 ASCE members that have been elected to the grade since the founding of the Society in 1853.

Representing the ASCE Region 5 Board of Governors and the ASCE Board of Direction, ASCE Region 5 Director, Steven C. McCutcheon, PE, presented Price with a commemorative

medallion acknowledging his election to Honorary Member. Representing the Section, Past President, Timothy M. Ruppert, PE, provided the audience with details about the significance of the ASCE Honorary Membership grade and presented Price with the Louisiana Section's Wall of Fame award for which he had been nominated by the Shreveport Branch Board of Directors.

In response, Price expressed the great honor he sensed by the attendance of so many of his friends and colleagues and his appreciation to the Shreveport Branch for hosting the reception. Price was scheduled to be officially raised to the grade of Honorary Member in a ceremony planned during the 2007 ASCE National Conference in Orlando, Florida in early November.



Bobby Price is congratulated by Steven McCutcheon after being presented his Distinguished Member commemorative medallion.



From the left are James Nelson, Steven McCutcheon, Daniel Thompson, Bobby Price, Elba Hamilton and Tim Ruppert.



Elba Hamilton and Daniel Thompson work the registration table.



Wife Patsy and Bobby Price following the ceremonies.

— Career Benchmarks —

Section members **Joan A. Giltner**, PE, and **Nicholas J. Olivier**, PE recently earned their professional engineering license in Louisiana. If you are in contact with any of them, please offer your congratulations on their accomplishment.

Louisiana residents **Robert B. Aillet**, PE, **Michael D. Galey**, PE, **Dan B. Graff**, PE, **Richard E. Harris**, PE, **Jake D. Lambert**, PE, **Michael J. Moran, III**, PE, **Ryan M. Richard**, PE, **William H. Stodghill**, PE, **Paul T. Vaught, III**, PE, and **Lei Qi Wang**, PE recently earned their professional engineering license in Louisiana. They are civil engineers or in a related discipline and they are not members of the ASCE. A copy of this issue of the journal is sent to them as an informal introduction to the Section. If any of them wish to join and/or find out more about the ASCE, they are hereby invited to visit the ASCE national website, <http://www.asce.org>. If you are in contact with any of these engineers, please consider formally introducing them to the Section by inviting them to attend a branch membership meeting as your guest.

There are 11 Section members who became Life Members as of 2008. They are usually invited to receive their Life Member certificate in person and be recognized during the awards banquet scheduled during the 2008 Section Annual Spring Meeting and Conference in Lafayette. They are from the Baton Rouge Branch; **Charles R. Turner**, PE, **Mrutyunjaya (Joy) Pani**, PE, and **Michael Jimenez**; from the New Orleans Branch; **Laurence L. Lambert**, PE, **Ataur R. Bhatti**, PE, **Edmond R. Genois**, **Thomas W. Wells**, PE, **Fernando Estevez**, PE, **Robert B. Anderson**, PE, and **Richard J. Cabiro**, PE; and from the Shreveport Branch; **Thomas J. Waxham**, PE.



Ranjit Jadhav

Section member **Ranjit S. Jadhav**, PE, recently earned his certification as a Diplomate, Water Resources Engineer by the American Academy of Water Resources Engineers. The Academy is a subgroup of the Environmental and Water Resources Institute of the ASCE. Jadhav is employed as a professional engineer in the Baton Rouge offices of FTN Associates, Ltd.

Editor's note: The environmental, structural and architectural engineering disciplines licensed by the Louisiana Professional Engineering and Land Surveying Board may be considered closely related to civil engineering. As of June 2007, the active engineering licenses conferred by the Board were approximately 5054 in civil, 725 in environmental, 87 in structural and 12 in architectural.

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— Calendar of Events —

February 27-29, 2008	ASCE Seminar * HEC-RAS Sediment Transport Analysis Using the Hydraulic Engineering Center's River Analysis System, New Orleans.
February 28-29, 2008	ASCE Seminar * Probabilistic Methods in Geotechnical Engineering, Atlanta, Georgia.
March 6-7, 2008	ASCE Seminar * Post Tensioning Construction and Design, Houston, Texas.
March 9-12, 2008	ASCE Conference * Geocongress 2008, New Orleans.
March 13-14, 2008	ASCE Seminar * Structural Design of Residential Buildings Using the 2006 international Residential Code, Atlanta, Georgia.
March 27-28, 2008	ASCE Seminar * Deep Foundations: Design, Construction and Quality Control, New Orleans.
March 27-28, 2008	ASCE Seminar * Steel-Framed Buildings: Practical Issues in Design and Renovation, Atlanta, Georgia.
April 17-18, 2008	ASCE Seminar * Post Tensioning Construction and Design, Nashville, Tennessee.
May 28-30, 2008	ASCE Seminar * Design of Foundations For Dynamic Loads, Atlanta, Georgia
May 29-30, 2008	ASCE Seminar * Design of Buildings in Coastal Regions, Corpus Christi, Texas.
May 29-30, 2008	ASCE Seminar * Effective Project Risk Management, San Antonio, Texas.
May 29-30, 2008	ASCE Seminar * Soil and Rock Slope Stability, Nashville, Tennessee.
June 5-6, 2008	ASCE Seminar * Deep Foundations: Design, Construction and Quality Control, Atlanta, Georgia.
June 5-6, 2008	ASCE Seminar * Design of Cold Formed Steel Structures, Nashville, Tennessee.
June 5-6, 2008	ASCE Seminar * Introduction to Detention Pond Design — Parking Lots and Urban Drainage, Atlanta, Georgia.
June 12-13, 2008	ASCE Seminar * Seismic Design of Highway Bridges, Nashville, Tennessee.
June 12-13, 2008	ASCE Seminar * Steel Framed Buildings: Practical Issues in Design and Renovation, Nashville, Tennessee.
June 19-20, 2008	ASCE Seminar * Financial Management for the Professional Engineer, Dallas, Texas.

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For the schedule and registration for the ASCE web seminar continuing education regularly offered: Visit the ASCE website / continuing education / distance learning / live interactive web seminars.

Awards revisited

In my truly sincere and *humble* acceptance of one of the Section's Wall of Fame awards presented during this year's Annual Meeting, I was immediately reminded of at least two editorials I had written in the Section journal being critical of the Section's awards processes and the awards processes in general. I did not miss the knitted eyebrows that my acceptance and my remarks provoked. This is not a new experience for me. Having typically shared with you only my views of the *bad* and the *ugly*, it is clearly time to admit that I have been remiss and share with you my views of the *good* in awards and possibly unravel an eyebrow or two.

To recapitulate, one of my greatest concerns is that the majority of the awards, in my opinion, are simply passed around — not necessarily indiscriminately — among the members and immediate ex-members of the Board of Directors and other currently active Society members known to the Board. It becomes a little much when Board members nominate themselves and/or approve their own awards. Another concern is that to become a recipient of most awards of which I am aware, the candidate must play an active role of resume polishing and completing the nomination forms. If you read these editorials, you know that none of this sits well with me... It still doesn't.

I was recently reminded in a wave of deep sadness at the death of my long-time friend and mentor, Roger P. Guissinger. Roger was a civil engineer on a path in his life I could never follow but only admire. When I was active in the Louisiana Engineering Society, I nominated Roger for its A.B. Patterson award for an engineer in management that I believed he richly deserved. He received it that year (1979) as he was rising to near the top of the administrative

ranks of the Louisiana DOTD. Though Roger had never taken an active role in the ASCE, the LES or any of the alphabet soup of engineering societies to my knowledge, I believe that he was imminently qualified for this award and possibly other awards as a professional engineer.

I had nearly forgotten — but was immediately reminded when I accepted the nomination for the Wall of Fame — the huge plus awards and recognition have played in my professional and personal life. The most obvious — the resume/ego builder — is not what I am referring to here. I have personally nominated, 4 or 5 people for various awards who actually received the awards for which they were nominated. I have actually refused to participate as a nominee for an award on the few other occasions the opportunity was made available. However, in a act that may appear on the surface to be pure hypocrisy, I have been completely disarmed twice that I can remember and "participated" willingly if not enthusiastically in my nomination for an award I received. I also know from experience that it is really true. There is much more gratification in taking a part in the recognition of someone else than in being recognized.

I surprised myself in a brief moment of inappropriate remorse to dig deep for my motive in accepting the Wall of Fame award. I found it right on the surface. It is the mutual respect that is being paid and accepted by significant others. In both awards for me the nomination was pursued by my significant others. For example, I was completely disarmed by our Baton Rouge Branch President, Brant B. Richard, PE. He had in my estimate been an exceptional leader in our Baton Rouge Branch — my leader. Though several years my junior, he is still my leader and for that, I hold him in high esteem. When he paid

me the complement and the respect by asking me to accept the Branch's nomination for the Wall of Fame — without understanding it and without hesitation — I spontaneously accepted his offer. I filled out the nomination forms. In accepting the award, I framed my acceptance in the *Godfatheresque* terms — Brant made me an offer I could not refuse.

The truly *humble* part for me in accepting the Wall of Fame award is knowing how very deserving and well respected the previous recipients actually are in my estimate. Similarly, I know deserving colleagues who have not been recognized as recipients and who in my belief share the same status of the previous recipients. I believe that all of them seriously overshadow me in our profession when measured by my standards. As I often suggest, who am I — who are any of us — to judge others?

Conclusion... I believe all of the awards of which I am aware are intrinsically founded in good and worthy intentions. Sometimes, I believe that the selection environment and process *stinks* and it seriously detracts from the value of the awards. Without exception, I believe that we humans are awful at judging each other. For this reason, we must strive to make what will always be a flawed process better and thereby the awards most meaningful. We as participants should strive for an integrity in the awards process that is consistent with the integrity of the recipients for which the awards are intended to honor. Therefore, keep it *personal*. Make it an expression of mutual respect between the nominees and nominators. Avoid even the appearance of a conflict of interest when possible. If this is done, I believe that greater integrity will be breathed into the process, into its participants and into the awards themselves.

Reliability, resilience and responsibility

In engineering, statistics and probably are taking their rightful place that was always there in reality but not applied to the factor of safety side of the design analysis equation. The *probability* of failure or the more positive *reliability* of success, either way, acknowledges that the balance of safety, economics and reason in conjunction with probability theory gives the engineer an opportunity to set practical and objective limits on the safety of the engineered man-made or man-altered environment (infrastructure).

In pure 20-20 hindsight, storm devastated south Louisiana after Hurricane Katrina offers at least two unlearned lessons. One lesson is that while the public in general benefits from a hurricane flood protection system, it directly assumes — *participates* in — the risk associated with it no matter how reliable. The other lesson is that the public is not and has not been effectively involved in establishing or even appreciating the risks it assumes or the consequences of the possible failure(s) it may experience. This seems to stem from a *laissez-faire* culture that unfortunately extended to engineering where I believe

that it has no place. Is it not part of the engineering process to enlist the participation of the lay public to effectively understand and participate in setting the level of risk it will assume? In pure hindsight, it beats the hell out of saying "Sorry!" when it is too late.

In Louisiana's public services, engineering technology and political issues do not appear to be that distinguishable and they are apparently handled — or not handled — behind the scenes with little or no public awareness much less public input being sought or heeded. As such this process is a disaster waiting to happen in a climatologically volatile region with a vulnerable coastal environment. With Hurricane Katrina, the time and the consequences have come to pass.

The legitimate issue may be defined reasonably by questioning what were the *adequate* engineering standards and processes that were applied and/or compromised. It appears that an environment evolved that allowed the failure of the engineers in *responsible charge* of the components of work to comprehensively participate in the engineering. It appears that they failed to assertively

check and challenge the content of their work that included and relied on the engineering of others. I believe that we know as a profession that there are no excuses that go with accepting responsible charge. The proverbial buck stops here. Responsible charge cannot be partitioned or blamed on others. An engineer's fee/salary is not hush money for half measures. The culture associated with any engineering service is not — and cannot be — under any circumstances left to a *laissez-faire* philosophy.

A separate issue that did not appear to be part of a conscious role in the engineering process for the hurricane flood protection system in the New Orleans region was the consequences of its failure. Failure being that incident when a storm event causes conditions that exceed a facility's capacity/safety set by an appropriate and planned analysis. What then? It has been long understood even without the application of probability theory that events can occur that are outside of what is engineered for and lead to failure. However, even in failure there can and should be consideration for... *What then?*

Resilience in failure where appropriate can be incorporated and of great value in safety by anticipating and controlling the nature of a failure and thereby the aftermath that follows. In structures, the characteristic of *ductility* allows large displacement in a member with substantially reduced increases in internal stress carrying capacity. This often will allow the redistribution of stress to other parts of a structure achieving redundancy. Ductile behavior may avoid collapse or avoid the sudden collapse that can be precipitated by *brittle* behavior or the sudden and substantial loss of internal stress carrying capacity. Structural steel beams with compact shapes and spirally reinforced concrete columns provide for ductile behavior and thereby resilience to — or ample warning of — collapse.

Boutwell and Prochaska in their feature article titled “Failures in the New Orleans levee

system during Hurricane Katrina” in the November 2006 issue in this journal noted there were some flood walls and levees in the New Orleans region that did not prematurely breach because of inadequate design and/or construction. They survived to be overtopped by flood waters then breached because the unprotected soil on the backside of their structure was eroded away. There was no consideration and/or preparation for the design flood capacity to be exceeded. Consequently, the backside of the flood walls and levees were not armored against the overtopping waters passing at some velocity over the bare soil resulting in its erosion.

It was so poignantly noted by Boutwell and Prochaska that the flooding from overtopping alone without the subsequent breaching would have been more of a *nuisance* — 1 or 2 feet of water. However, the breaching of the hurricane

flood control facilities caused by the overtopping water resulted in flooding — 10 to 12 feet of water — that was a *disaster*.

The point... The historic design conditions — or statistics and probability based design conditions — that are applied to the deterministic design processes can be used to appropriately evaluate, size and strengthen facilities for the anticipated event(s) if appropriately followed. However, the engineering does not stop here. It is incumbent on each engineer in responsible charge to understand and professionally accept responsibility for the design conditions applied whether or not they participated in the development. The resulting failure due to an event that *will* exceed the design conditions anticipated at any given reliability should be part of a vulnerability assessment to provide for the resilience of a facility.

(Continued from Page 15)

The allegations against the ASCE raised by Raymond Seed who participated as a member of one of the teams investigating the failure of the flood protection system in New Orleans following Hurricane Katrina is apparently feeding the flames of disquiet among the residents of New Orleans since it was released to the press. It appears that the local residents are extremely dissatisfied with — and disappointed in — the results of the investigations of the flood protection system performed under the auspices of the ASCE. This is because there was no culpability assigned to the U.S. Army Corps of Engineers

for the failure. This would reinforce the premise of class action suits that accuse the Corps of being at fault for the failures.

A representative of the Section to attend the ASCE Leadership Training in Government Relations in Washington, D.C. — otherwise known as Congressl *The Fly-In* — was discussed at length. It was generally agreed that first priority should go to a member of the Section's elected leadership. This is an expense paid trip to Washington, D.C. for a Section representative who preferably has prior experience lobbying state legislators for example, has a

desire to continue their lobbying efforts and a goal to improve their abilities and facilitate the abilities of their fellow members by sharing their Fly-In experience with other who are interested.

The cost estimates were requested and received from printing companies in the Baton Rouge area to print and publish the Section journal. With two competitive estimates from companies deemed capable of handling this work, the company Baton Rouge Press located in Port Allen was recommended by the Publications Committee and the Committee's recommendation was accepted by the Board.

(Continued from Page 7)



Figure 10. Threaded rods are anchored with square oversized washers recessed into the bottom of a second floor support beam to which they transfer the uplift forces from the top plate of the second floor wall. The rods are located either side of an opening in the second floor stud wall. The uplift forces are transferred through the second floor support beam to the first floor square steel tube column attached to the beam with two threaded rods anchored by oversized square washers located on top of the beam.

Roof sheathing

For the same reason that critical wall panels are glued, the roof sheathing at the corner of gables should also be glued. With the exception of open porches, this is where the greatest uplift forces exist. Likewise, the exterior interface of a gable and end wall should either be strapped or nailed and glued with an overlap.



Figure 11. This is an example of an installed alternative connection to the U strap that connects studs to the top and bottom plates.



Figure 13. Corner conditions can require a more substantial hold down as in this example where a Simpson hold down device attached to the corner studs is used in lieu of threaded rods located near the corner and anchoring the top plate.

Tie-downs

Continuity in resisting the uplift forces is essential above all openings such as doors and windows. Figure 16 demonstrates the use of threaded rods on either side of a door opening whereas Figure 17 demonstrates the use of strapping for the same purpose.

Uplift forces in posts at the corners of porches and in carports should never be overlooked.



Figure 14. A glue bead is being applied to the studs before attaching the exterior wall sheathing.

(Continued on Page 20)



Figure 15. The continuity to resist uplift forces in this critical area between floors is developed through the OSB panels that straddle the first and second floors with their edges nailed and glued to the solid blocking provided near the top of the first floor level. The threaded rod extends through the top plate of the first floor wall to anchor the top plate of the second floor wall to additionally resist uplift forces.



Figure 16. The threaded rods either side of the door opening provide continuity to resist the uplift forces over the door that are transferred by the shear wall also over the door.

Tie-downs are imperative and should be a doweled post receptacle such as the one shown in Figure 18. Its dowels are installed in holes drilled in the concrete and glued with an epoxy.

Elevated residences

In flood prone areas, the floor elevation of residences is being raised to minimize the risk of flood damage. The columns or piers used to



Figure 17. The straps nailed to the window framing studs and to the top plate provide continuity to resist the uplift forces over the window opening.

elevate these residences vary in length from as low as 3 feet up to 14 feet above the ground line. This presents an added challenge to address the lateral and uplift loads. The preferred method of construction is the cast-in-place reinforced concrete column with the reinforcement required to resist the applied loads. If reinforced concrete masonry units are used, it is essential that careful attention be given to sufficient reinforcement



Figure 19. Cast-in-place reinforced concrete piers or columns support this elevated residence in a flood prone area.



Figure 18. This corner post receptacle equipped with dowels that are inserted into holes drilled into the concrete slab. It is glued to the concrete slab with an epoxy and then nailed to the post to resist uplift forces.

overlap and proper grouting in the grouted cells. With the greater frequency of this type of construction being required, it has become easier to insist on the more reliable cast-in-place reinforced concrete columns as shown in Figure 19.

In less populated areas, driven timber piling that extend above ground as shown in Figure 20 are the norm. Care must be taken to provide



Figure 20. Driven timber piles are extended above the ground line and serve as the columns to support this residence in a flood prone area.



Figure 21. The monolithic foundation slab cast on the ground under this elevated residence provides the support for the open steel frames that support the residence. The columns are anchored to the slab that approximates flexural fixity at their base.

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adequate cross bracing between the piling for lateral strength and stability. Monolithic foundation slabs cast on the ground as shown in Figure 21 are encouraged to approximate fixity for the moment at the ground level for the piers or columns that extend above the ground.

New products

Many new residential building products are appearing in new construction during the recovery from Hurricane Katrina. They consist of

- OSB-SIP (structural insulated panel) construction
- steel-SIP construction
- IFC construction (stay-in-place insulated

- concrete forms) and
- modular housing for example.

Conclusion

An overview is presented of the common analyses, details and observations required for proper wind resistant design for residential construction using conventional framing in high design wind speed regions. The rules that apply for conventional building products also apply for the new building products. The applied wind loads must be taken down a competent load path through the structure and connect to the building foundation to resist the uplift, lateral, and over-

turning loads. Stated another way, whether a building consists of a routine or an alternative new construction practice, the transfer of uplift, overturning, and lateral loads to the foundation must be satisfactorily addressed. Confirmation of this can only be accomplished by competent design and field verification of the structural details. The entire chain of events including design, construction and inspection/enforcement is best left in the responsible hands of professional engineers. This has already been procedurally established in some municipalities in the hurricane prone areas on the Gulf coast and it is becoming more commonplace.

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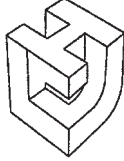


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