



Newsletter of the American Concrete Institute, Inc., Northern California & Western Nevada Chapter, Inc.

**2001-2002**

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ACI Chapter

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ACI International

[www.aci-int.org](http://www.aci-int.org)

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*Newsletter*

**January 2002 ACI & SEAONC Joint Meeting**

**Tuesday:** January 8, 2002

**Location:** The City Club • 155 Sansome St., 10th Floor • San Francisco

**Social Hour:** 5:45 p.m. • Dinner: 6:30 p.m. • Program: 7:30 p.m.

**Price:** \$32.00 for ACI or SEAONC Members

\$35.00 for Non-Members

**Make Check Payable to:** SEAONC

**Reservations:** *Please make your reservations directly with SEAONC by phone at 415/974-5147 or FAX at 415/764-4915*  
**Reservation Deadline -- Noon Wednesday, January 2nd!**

**Note:** *If you are coming by BART, get off at the Montgomery St. Station and take the Sansome St. exit.*

**Program:** *Nabih Youssef - "Cathedral of Our Lady of Angels"*

**Program: Los Angeles' New Base Isolated Cathedral**

*Nabih Youssef, Nabih Youssef & Associates, will discuss the The Cathedral of Our Lady of the Angels.* This new Cathedral complex consists of five building structures. The Cathedral Church (a two-story, 150 foot tall building) and the Campanile (a 160 foot tall bell tower) are both shear wall structures with architecturally exposed concrete and base isolation. Structural design criteria were developed based on the seismic performance objective of Immediate Occupancy. At this performance level, only minor structural damage is anticipated during a major seismic event. Therefore, it was determined that seismic isolation is the most effective design strategy for achieving the desired seismic performance for both the Cathedral Church and the Campanile.

*Since 1971 Mr. Youssef has been a registered civil and structural engineer and a recognized expert in the seismic design and retrofit of new and historic buildings including the Los Angeles City Hall, Saint Monica's Church in Santa Monica, the J. Paul Getty Museum, and the Caltrans Transbay Terminal in San Francisco.*

**Tech Tip: Redistribution of Concrete Impact Stress**

When an impact occurs between two rigid materials (i.e. a jackhammer and concrete) a shock wave is created that travels through the two materials. If the concrete is homogeneous, then this wave travels in a straight line and the total force of the impact is delivered to a small volume of concrete, causing more intense structural damage.

Obviously, redistribution of impact stress over a larger volume of concrete will lower the stress per unit volume, and the concrete is more likely to suffer no structural damage.

# President's Message: Personal Goals & Passion for Your Profession

*The approaching New Year brings us a chance to reminisce about the past year and make resolutions for the upcoming year, 2002. It is a tradition in this country to make a New Years Resolution. This is an important step in our success because it is a goal you have set for yourself and no one else. Goal setting is an important aspect in a person's passion for personal growth, as exemplified by two professional athletes, Michael Jordan and Kurt Warner.*

Michael Jordan's passion was to play basketball and his goal was to be the best player in the sport but, in his Sophomore year in High School he was cut from the High School team. Michael practiced hard every day for the rest of the year and as a junior made the basketball team. He went on to set new scoring records for the school, which have yet to be broken and became the best basketball player in the sports history with the Chicago Bulls.

Kurt Warner, quarterback for the St. Louis Rams, had a passion to play football and his goal was to play in the NFL. Kurt spent his summers detasseling corn in Iowa before being recruited to play football at Northern Iowa. Kurt set on the bench for three years before getting a chance to play in college and eventually was picked by the Green Bay Packers in the NFL. The Green Bay Packers cut Kurt after only 14 practice plays! Warner stocked groceries in Iowa until being picked up by the Iowa Barnstormers of the Indoor Football League and eventually was picked up by the St. Louis Rams. Again, Kurt set was sitting on the bench until an injury to the starting quarterback allowed Kurt be thrown into the spotlight and has become one of the best Quarterbacks in the NFL.

Is personal goal setting important? **You Bet!!** Is keeping the passion to reach your goal important? **Absolutely!!** Goal setting is the driving point for all of us, to keep our passion, for this industry. The ACI Chapter allows us to learn from other professionals, practice our skills as a professional and is a continuous source of education to keep the passion alive. Without a passion for our profession we are faced with twice the obstacles as those who do have this passion. ***The answer to success -- love what you do -- passion is the key to happiness and success!!***

***Happy New Year to all of you!!!!***

Sincerely,



Royce J. Rhoads, President

## Tech Tip: Redistribution of Impact Stress

Continued from 1

While gravel and rebar in traditional concrete structures serve to redistribute stress, the result is not optimal because gravel and rebar have a higher specific gravity than the surrounding concrete, and can serve to bounce the shock waves off these materials, like an air hockey puck bouncing off its rink walls. Like the puck, the shock wave retains most of its energy after a bounce, and only gradually dissipates all of its energy and comes to rest. Unlike the puck, the shock wave delivers a much more forcible blow, with enough energy to shake a pebble or section of rebar as it bounces off, causing cracks to form in the surrounding concrete, but this is a secondary effect.

In summary, rebar and gravel redistribute shock largely by altering the wave's direction, and absorb only small amounts of energy, while producing a reflected shock wave that remains fairly concentrated.

Redistribution of shock by an elastic material with a lower specific gravity than the surrounding concrete has many advantages. The lower specific gravity "traps" a shock wave inside the material (fiber), and the wave divides. A smaller shock wave is sent into the concrete while the bulk of the wave rebounds into the fiber's interior. Since the fiber is not rigid and is very light, any motion of the fiber is not likely to cause damage to the surrounding concrete.

In contrast to gravel and rebar, the fiber divides the wave into smaller waves and redistributes them more diffusely throughout the concrete and achieves the goal of minimizing stress per unit volume of concrete.





**THE AMERICAN CONCRETE INSTITUTE**  
**Northern California and Western Nevada Chapter**

**CERTIFICATION COMMITTEE SCHEDULE for FIELD TECH 1 TRAINING**

<b>JAN. 19/26</b>	SACRAMENTO (TEICHERT) ( <i>SOLD OUT</i> )	<b>JUNE 8/15</b>	PETALUMA AREA
<b>JAN. 26/FEB.2</b>	SAN LUIS OBISPO	<b>JULY 13/20</b>	SAN RAMON (RMC PACIFIC MAT.)
<b>FEB. 2/9</b>	SAN JOSE ( <i>SOLD OUT</i> )	<b>JULY 27/AUG.3</b>	AROMAS (GRANITE ROCK)
<b>FEB. 21/MAR. 2</b>	SANTA ROSA AREA	<b>AUG. 17/24</b>	RENO AREA
<b>MAR. 9/16</b>	SAN RAMON (RMC PACIFIC MAT.)	<b>SEPT. 7/14</b>	SACRAMENTO (TEICHERT)
<b>APR. 6/13</b>	REDDING (CALAVERAS CEMENT)	<b>OCT. 12/19</b>	STOCKTON (TEICHERT)
<b>MAY 11/18</b>	SUNOL (MISSION VALLEY ROCK)	<b>NOV. 9/16</b>	SAN RAMON (RMC PACIFIC)

**APPLICATION FOR GRADE 1 FIELD TESTING TECHNICIAN CERTIFICATION, 2002**

Name: \_\_\_\_\_ Session Date: \_\_\_\_\_

Company: \_\_\_\_\_ Session Location: \_\_\_\_\_

Address: \_\_\_\_\_ Indicate Course:

\_\_\_\_\_ Two-day Course ..... \$255.00

\_\_\_\_\_ Recertification ..... \$255.00

\_\_\_\_\_ Retest ..... \$155.00

\_\_\_\_\_ Concrete Strength Testing

\_\_\_\_\_ Exam Only ..... \$275.00

Telephone: (Day) \_\_\_\_\_

(Eve) \_\_\_\_\_

Fax: \_\_\_\_\_

**Total Fee Enclosed: \$ \_\_\_\_\_**

• Applicants must be able to lift 50 lbs. •

Class and test time typically 8am to 4pm  
 Dress appropriately for concrete testing.

Concrete Strength Testing and  
 Certified Laboratory Technician exams  
 will be available depending on demand.

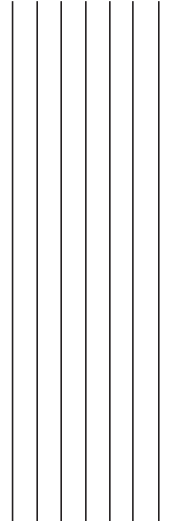
When your check is received,  
 your place in the class will be reserved.

You will then be notified of the  
 confirmation of your reservation and  
 the class schedule.

**Notice:** Fees for “no shows” are forfeited and are NOT REFUNDABLE  
 without five-day notice prior to the session date.

**Make checks payable to:** Northern California & Western Nevada Chapter, ACI

**Mail checks & make inquiries to:** Ted Allured Phone: 800- 753-7711  
 444 Oak Place Fax: 209-754-1559  
 San Andreas, CA 95249



ADDRESS CORRECTION REQUESTED



San Andreas, CA 95249  
444 Oak Place

Northern California & Western Nevada Chapter

## January's Newsletter Quiz -- A Question of Concrete Strength

*What is the difference between High-Strength Concrete and Normal-Strength Concrete?\**

- A. \_\_\_ Higher tensile strength
- B. \_\_\_ Higher compressive strength
- C. \_\_\_ Thicker density, greater workability
- D. \_\_\_ Greater resistance to freezing and thawing
- E. \_\_\_ Shorter curing time

*\* Answer in next month's Newsletter. If you have a tech trivia question, submit it!*

*Answer to November's Newsletter Quiz:*

C. Illinois Contractor, Robert H. Aiken filed a patent with the U.S. Patent Office to build tilt-up concrete retaining walls and buildings on April 29, 1907. Architects Frank Lloyd Wright and Irving J. Gill, both used tilt-up extensively but did not invent the process. Edison, who was a cement producer, was more of a poured wall contractor.

## ACI Websites - Local ([www.aci-ncawnv.org](http://www.aci-ncawnv.org)) International ([www.aci-int.org](http://www.aci-int.org))

If you have not visited our local Chapter's website, you are missing out. There is an amazing amount of information available. ACI International's website also provides a variety of important information.

## ACI Scholarships Available for High School & College Students

Our scholarships are available to all ACI Chapter members' families. Eligible students include High School graduates who are going on to college and those who are graduating from a Jr. or Community College and going on to a four-year school. Currently enrolled college students are also eligible. *Contact our Executive Manager Ted Allured at 800-753-7711 for more information.*