



Cactus Comments

October, 2006

PRESIDENT'S PAGE

George Wadding
Star Roofing

CONSTRUCTION SCHEDULING

Our first dinner program meeting brought together three articulate individuals with over 8 decades of construction experience; suffice it to say that their credentials are impressive. We had a broad cross section of the industry in attendance which generated a number of varied questions. Four attendees caught me after adjournment (at 8:30 sharp) to comment on the quality of the program. Scheduling has become a significant problem and a nearly every-day aggravation for many of us.

I can't possibly do justice to their presentations; you really "had to be there."

Fred Friedl, PE, RLS, CPC, LEED AP of Sundt Construction explained their Last Planner Method which pulls heavily on the specialized knowledge the subcontractors (SC) for a project to assemble the plan to remove the "constraints". In a one hour weekly meeting, the SC review their work, commit to what they will accomplish, and work out the needed precedents. Near the end of the week, they come together again and review how many and how well the commitments were met. The peer accountability has proven to all the skeptics the value of SC structuring the schedule.

Ward Simpson, AIA, 3D/I functions principally as an owners' management consultant. His presentation emphasized the benefits of preplanning in the early stages of a construction project before the dirt is turned. As he pointed out, overlooking something, which could be easily overlooked because it is not normally part of costing i.e. archeological requirements, can affect project planning and execution to a significant degree, perhaps causing many months of delay.

Donald Fredlund, Jr., PMA Consultants, provides cost/schedule administration and control on a wide variety of projects. His presentation included a review both of current scheduling software and of the directions in which developers are headed. The view among many in his field is that in the attempt to be all things to all businesses some of the prominent names in software have included detail and complexity which has become burdensome to the construction industry user. The result is that new, more efficient products are in the process of development.

IS ANYBODY OUT THERE?

While I am quite aware that my offerings to Cactus Comments could hardly be described as deathless prose, I and everyone else who contributes to Cactus Comments, wonders from time to time: Is anyone reading this stuff? Speaking for all, I encourage you to drop a line if you read something that increased your knowledge of some aspect of our industry or if you thought one of us went over the edge or if we flat out made an erroneous statement.

You may not have realized that both your comments or criticism encourage authors. The Publications Committee has made it incredibly easy to do so. The underlined author's name to the right is a link to him/her. Click on it and your email editor will open up with the name on it so all you have to do is type in "great", "you need to check your fact on ---", or "what about---".

ALTERNATE PROJECT DELIVERY METHODS

Recognizing that times and procedures in this industry, like many others is changing, a group of subcontractors, materials and systems providers and manufacturers have recognized that they have more to contribute than just pricing, labor and/or materials. Many owners have determined that CM/R better fits their needs.

In its earliest stages, that method has, in many subcontractors' views, meant only that they are forced to bid the same job three or four times, usually without any significant opportunity to provide information that could assist both the (already selected) CM/R and the owner in the process.

Accordingly, they have produced a set of documents to provide some guidelines to how their qualifications for a project could be evaluated more methodically. For a better understanding of the selection of subcontractors by qualifications, don't miss Phoenix Chapter's October meeting.

Qualification-Based Contracting of Subcontractors, Specialty Suppliers, and Vendors

With the advent construction management at risk (CMAR), design-build (DB), and job-order contracting (JOC) in the State of Arizona, the selection of contractors has quickly gone from a price-based selection process to a qualification-based selection process. However, that is where it typically stopped. From that point on, contractors (or, in the case of CMAR, construction managers) weren't bound to the same criteria to select their subcontractors and vendors. In most cases, for subcontractors and vendors, the selection process was "business as usual": they submit a price and the contractor or CM would make the selection primarily on the lowest price provided.

However, with the passing of House Bill HB2579 last year, the law now states that if the CMAR, DB entity, or JOC contractor are selected based on qualifications (which they almost always are), then the selection of subcontractors and vendors must also be based on qualifications, or a combination of qualifications and price.

The Alliance for Construction Excellence (ACE), established subcommittees to develop criteria that could be used by contractors and CMs in evaluating and selecting subcontractors and vendors in order to comply with the law.

The October meeting will consist of panelists from the subcontracting and vendor communities who participated in the development of these evaluation guidelines, and will provide their insights on the implementation and application of the law and qualification-based selection.

Date October 11, 2006

Place Holiday Inn, Tempe / ASU
 915 E. Apache Blvd.
 Tempe, Arizona

Time 5:30 p.m. Social Hour
 6:30 p.m. Dinner
 7:30 p.m. Presentation

Knowledge Breeds Confidence

Joe Volinsky
FBI inc/AZ

The educational committee has come up with an aggressive schedule for the upcoming months...

October 26
Understanding Construction Specifications for the Non-Specifier.
Ron Geren at The Reference Library

November 9-11
CDT exam prep course
The Reference Library

November 18
CDT Exam

January, 2007
Construction Contract Administration: Details to follow

February 13 – March 8, 2007
Spec School
ASU: 8 nights (Tu/Th)

May, 2007
Product Rep Academy: Details to follow

June, 2007
Master Format: Details to follow

Mark your calendars and get signed up!

Mr Wolfe Goes to Washington

Sheldon Wolfe, RA, FCSI, CCS, CCCA

While you were on vacation...

The purpose of these articles is to tell our members about what is going on at Institute, and there is a lot to tell. During the last year, my first as an Institute director, I learned a lot about our board of directors, financial status, operations, staff, and more. I also had the opportunity to experience first-hand how our officers and directors work together to resolve differences, and I was impressed with how well it worked.

As we enter this new year, many important activities are in the works. This month, I'll say a little about several of the more significant ones, and as the year goes on, we'll look at some of them in more detail. As always, I'll try to explain the subject, and tell you the way I see it. Remember - when I express my opinions, that's just what they are; I'm not speaking for the Board, but as your representative. That doesn't mean I won't do a little cheerleading now and then, but I won't try to fool you.

One of our top priorities is finding a new executive director. The Executive Director Search Task Team (EDSTT), comprising Tom Deines, Teri Hand, Jack Klemeyer, George White, Gary Betts, and Chairman Ross Spiegel, has been working through the summer. After discussions with a number of national search firms, they selected Korn/Ferry International, an executive-level recruiter headquartered in Los Angeles. In late August, Korn/Ferry made stakeholder calls, then interviewed one director from each CSI region, the Executive Committee, and CSI senior staff. Following those interviews, Korn/Ferry sent a draft position specification to the Board for review and comment.

The schedule for the remainder of our search for an executive director is tight, but both the EDSTT and Korn/Ferry are confident it can be met.

- Specification published for public access: Specification appears on both CSI's and Korn/Ferry's websites.
- Screening and interview of potential candidates by Korn/Ferry: August through September.
- Task Team teleconference to review long list of candidates: Early October.
- Interviews by Task Team: October.
- Referencing verification by Korn/Ferry: Early November.
- Presentation of selected candidates to Board: Mid-November.

Another consultant, The Greenway Group, is working with the Board to address issues that have been identified as critical to CSI's growth - branding, governance, and establishment of a Product Manufacturer's Council. The goal of this effort is to increase awareness of CSI and improve the way we run our organization.

Some of the work being done by other task teams includes:

- Governance: This team is looking at the size and composition of the Board, how directors and officers are selected, and leadership development.
- MasterFormat Maintenance: One of the changes in the last MasterFormat update was the introduction of a maintenance team that will continually review use of MasterFormat and requests for new numbers and titles, and work with manufacturers and information integrators.
- SectionFormat/PageFormat: This group is actively working on SectionFormat, posting drafts to the CSI website for review.
- Sustainable Facility: This could be the beginning of a new Format document, this one designed to organize sustainable product information in a standard format.
- Terminology Initiative: Ideally, the same terms would be used for the same things everywhere. This task team is working toward that end, beginning with an investigation of existing glossaries, abbreviations, etc.
- UDS. The UDS has been available for some time; this group is working on its promotion and maintenance. It is also working on education and certification programs for CAD technicians.

These are just a few of the programs we have going, and each has its own story. In the next couple of weeks, see what you can find out about a program you find interesting. If you don't find what you're looking for, or if you have comments about what you do discover, don't let it go - contact your region or Institute director. That's why we get the big bucks!

Sheldon Wolfe, RA, FCSI, CCS, CCCA
Institute Director, North Central Region, CSI

Member Bios

Jill Rehse, CSI
The Reference Library

H. Maynard Blumer, FAIA, FCSI, Consulting Architect
480-948-6632

Mr. Blumer has been an active member of CSI for 44 years. He began his career in The Construction Specifications Institute in 1962. Since then, Maynard has been President (1967-1968), Vice President (1965-1967), and chaired Maynard's Corner (shop talk before chapter meetings).

Maynard works as a consultant, advising architects, contractors, attorneys investigating of construction faults, expert witness, and writing specifications. The two most important contributions to the profession for which Maynard is very proud of are: developing and establishing "prior approval" nation wide and in Arizona law, and secondly, establishing in the AIA General Conditions that the architect during construction is not liable for decisions rendered in good faith.

What Maynard has gained from CSI is the association with others in the same professional interest. He was also rewarded a fellowship in both AIA and CSI through his publications in Cactus Comments and the Specifier.

Maynard graduated from Oklahoma State in 1953 with an Architecture degree and then received a business degree at Arizona State in 1976. He grew up in Oklahoma and lived in the same house he grew up in until he married his wife 54 years ago. Maynard enjoys traveling and photography and working on his house and yard. One of his most memorable trips was in Europe, where his tour bus was the first into the Soviet after the wall came down.

Since Maynard's wife retired in 1965, he serves her breakfast in bed every day. His wife, two daughters, one son, two grandsons, and one grand daughter are the most important part of his life—architecture is his second love.

Maynard loves to share his knowledge of the construction industry and invites all to call him to talk about problems (at no charge).

The Phoenix Chapter is very proud to have F. Maynard Blumer as part of our membership.

Michael Rael
Tri-West
480-993-4472
mrael@trivestltd.com

Tri-West is one of the largest flooring distributors in the country, serving both commercial and residential products; this year, celebrating its 25th anniversary. Michael is the A&D rep and works in the Arizona, New Mexico, and El Paso territories. A project that Michael is most proud of is the Crossroads Clinic. Tri-West is promoting a new product (ionique) which a lot of people are skeptical about and the Crossroads Clinic was the first official spec for the product.

Michael is a fairly new member with CSI, joining a few months ago but has helped with the calling committee for the past two years. He hopes to build relationships through CSI and learn more about the industry.

Michael grew up in Albuquerque, NM and graduated from UNM. He enjoys mountain biking, golf, and recently getting into photography.

The Phoenix Chapter welcomes Michael Real to our chapter.

NEW MEMBER ORIENTATION

September 11, 2006 ATTENDEES
Teri Hand, CSI, CDT, LEED AP
Tnemec

Jennifer Neuville
Frazee Paint
602/725-2163
jnueville@frazee.com
Architectural Representative
Jennifer has a Bachelor of Science in Finance and
A Masters in Business Administration
Her hometown is PHOENIX, ARIZONA
(Education Committee)

Kathleen Powers
Mechoshade Systems
480/656-8769
kathleen@mechoshade.com
Business Development Manager
Kathleen Has a Bachelor of Arts degree in Communications
She comes to Arizona from Illinois/Iowa areas
Ms Powers is a LEED Accredited Professional,
And is a member of the USGBC Education Committee
(Program Committee)

Michael Real
Tri-West
480/993-4472
mrael@trivestltd.com
H & D Representative
Michael received his education from UNM & TVI
His hometown is Albuquerque, New Mexico
(Calling Committee)

Also new to the Phoenix Chapter:

Rodolfo Arellano, Butler Design Group, 602/957-1800, rodolores@cox.net
Kirk Haverwahl, Uhaul Intn'l, 602/263-6502, kirk_haverwahl@uhual.com

Please join me in welcoming our New Members to the Phoenix Chapter of CSI!

CSI Certification News

The Phoenix Chapter has set up for a special CDT exam to be held here in-town on November 18. Many of you have expressed an interest in the exam or in education. See the hot link below for the CSI registration site.

We are also going to have another 3-day construction documents seminar sometime in late October or early November. The Education committee will be meeting later this month to finalize the education plans. More info on the education seminar will be forthcoming.

If you are interested in the exam, or if you know someone who is interested, the final registration is September 19.

For any questions, please feel free to contact me.

Thanks.

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CSI Academies

The national CSI Academies are two-and-a-half-days of intensive education. The CSI Academies are tailored to enhance the professional capabilities of experienced product representatives, specifiers, construction administrators, architects, engineers and more. The program offers nearly 16 LUs and 1.6 CEUs of continuing education credits.

The Academies have general sessions for everyone and separate tracks for individuals who represent products, specify materials, or perform construction contract administration. Each track is presented by experts in their field on how things should be done. Product representatives lead sessions on product representation, specifiers teach about specs and product performance, and certified contract administrators lead sessions on CCA. Throw in a lawyer, a couple of guide specification development firms, and a professional speaker or two, and everyone leaves with some useful information. The best part - you register for one track and you can attend sessions from other tracks if they are of more interest to you.

Where - At the Snowbird resort in Utah (outside Salt Lake City) - terrific facility where the CSI Southwest Region Conference was held in July.

When - October 16-18, 2006

Use this link to access CSINET for additional info: www.csinet.org/academies

CSI is offering a special education promotion for those who register by the early bird and hotel cut-off deadline of September 12, 2006. They will be entered into a drawing to win a FREE CSI Webinar in 2007.

CSI Academies Information

2006 Academies Promo Flyer

Academy Matrix for Web

Refer a Friend Promo

http://www.magnetmail.net/actions/email_web_version.cfm?recipient_id=13921407&message_id=212456&user_id=Construct

An Architect's Library

Alexandra Lemos-Duncan, CSI
Douglas Fredrikson Architects

"What could I possibly write about?" This has been the question that has been daunting me since I attended my first Technical Committee meeting. Once I realized that not many people would care about the latest trends in women's footwear, I decided to seek a more appropriate topic.

So, in an effort to find "the" perfect topic, I sought inspiration within the shelves of my personal library. Searching through rows of dust covered journals, I had hoped that something might click, a trigger or an inspirational spark to send the journalistic energies flowing.

This is what I found - *Why Buildings Stand Up, Mechanical and Electrical Equipment for Buildings, Passages in Modern Sculpture, What is Architecture?, Applied Structural Steel Design, For an Architecture of Reality, Residential Wood Framing*, and, of course, Frank Lloyd Wright.

Needless to say, this did not aid in the selection of a thesis nor did it convince me that I would be the life of the next CSI Christmas party. But, what it did succeed in doing is to remind me of the amount of knowledge required among those in our profession. I am not referring solely to the profession of architecture. I am referring to any person participating in the development of our built environment. Much information is required to build a single structure or to create a "space." A great task that is not getting any simpler due to changing technologies, expedited schedules, and let's not forget everybody's favorite - BUDGET!

One of my first and very naive observations upon entering the profession was the surprise and amazement that anything ever got built! The amount of process and players that are required to achieve even the simplest structure was overwhelming. But, as I began to broaden my experience I soon learned that the means existed to not only simplify the process but to also enhance the experience.

Along with any formal training which I have received to become an architect, I often find myself calling upon my library for assistance, reference and/or inspiration. Thankfully, those valued resources have now expanded to not only include books and magazines but, more importantly, to include those people that I have met along the way.

The professionals that I have encountered in my ongoing education are those who can help me understand how buildings stand up or to discover what is the reality of architecture. Our profession consists of a diverse group of professionals that are and should always be regarded as valuable resources. It is our personal and professional responsibility to acknowledge that these resources exist and to make the most of the opportunities presented to us.

Those of us who are lucky enough to love what we do are hopefully lucky enough to remember why we all do this.

Every day is a chance to participate in something new and every new project presents a new challenge. The people and resources that surround us are an integral part of that experience. If that is truly the case, then if we increase the number of quality resources we make available to ourselves, in turn, we increase the quality of our experience. The process has now been simplified, the players identified and what was once a seemingly overwhelming task has now become a gratifying and enriching experience.

Besides, it is a lot less expensive and a lot more enjoyable to talk exterior cladding over a glass of wine with a friend than it is to buy the latest book about Frank Gehry.

Alex Duncan, CSI is a Project Manager at Douglas Fredrikson Architects. Alex is currently pursuing her registration and participates in the Technical Committee.

THE CODE CORNER

Definitions: The Building Code Lexicon
By Ronald L. Geren, RA, CSI, CCS, CCCA

Dictionaries: I would venture to say that every adult and school student owns at least one of these books. The earliest form of dictionary can be traced back as far as the 7th century B.C. The library of Ashurbanipal, the king of Assyria, Nineveh (near modern day Mosul, Iraq), included clay tablets with cuneiform (wedge-shaped) inscriptions, or symbols, that represented words, sounds, and numbers.

If you're in a business that has a lexicon of its own, you probably have a special dictionary just for that business. Lawyers couldn't impart legal advice without Black's Law Dictionary, and physicians couldn't uphold their Hippocratic Oath without Stedman's Medical Dictionary on their shelf. Personally, I own two different construction dictionaries.

As a matter of fact, we couldn't communicate much of anything without knowing the meanings of the words we use. But we have a limited ability to remember all of the meanings to words we might encounter. The average person utilizes only a small portion of their brain's cognitive potential; some more, some less (No, I'm not going to tell you where I'm situated on that imprecise scale). As a result, we need to a handy-dandy little "book of words" at our beck and call.

A similar requirement applies when using building codes: we couldn't use them properly unless we know the meanings of the special terms used within them. In most cases, the terms used by building codes carry the same meanings found in a common dictionary. In fact, up until the publication of the *International Building Code* (IBC), the *Uniform Building Code* established the *Webster's Third New International Dictionary of the English Language* (editions varied depending on publication date) as the only source of meanings for words or terms not defined in the building code itself. The IBC has dropped the *Webster's* dictionary in favor of a broad statement that accepts the "ordinarily accepted meanings" for terms not defined in the Code.

The purpose of having special definitions for terms that may be found in the common dictionary is that those common definitions are typically too broad for a legally-based document such as the building code. Take the term "accessible" for example. According to my dictionary¹, accessible means, "Easily approached, entered, or obtainable." But in the context of the building code, you could ask this question: To whom does this apply? Prior to the Americans with Disabilities Act (ADA), a lot of people would have considered their buildings to be "accessible" to the public. But, with the passing of the ADA, the term "accessible" took on a new meaning that most dictionaries still don't include. Therefore, the building code has to define it as "A site, building, facility or portion thereof, that complies with this chapter." The chapter referenced in the definition is Chapter 11 entitled "Accessibility." In Section 1101.1, the scope of the chapter is to "control the design and construction of facilities for accessibility to physically disabled persons." Therefore, "accessible" under the building code applies to "physically disabled persons." A meaning that couldn't be legally obtained from the definition found in a common dictionary.

When using the building code, you have to be aware of the fact that certain terms carry very specific meanings. When you come across a term in the building code for which you know the "ordinarily accepted meaning," you had better check Chapter 2 of the IBC (Chapter 3 in the NFPA 5000) to make sure that the building code hasn't narrowed that definition to a more specific application.

Some examples to illustrate this can be found in the comparisons listed below of code-related terms as defined by the IBC and Webster's Dictionary¹:

- **Approved**
 - (IBC) Acceptable to the building official.
 - (Webster's) To confirm officially: ratify.
- **Court**
 - (IBC) An open, uncovered space, unobstructed to the sky, bounded on three or more sides by exterior building walls or other enclosing devices.
 - (Webster's) A courtyard. - courtyard: An open space enclosed by walls, within or adjoining a large building.
- **Dwelling**
 - (IBC) A building that contains one or two dwelling units used, intended or designed to be used, rented, leased, let or hired out to be occupied for living purposes.
 - (Webster's) A residence.
- **Exit**
 - (IBC) That portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge.
 - (Webster's) A passage or way out.
- **Platform**
 - (IBC) A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round stages; and similar purposes wherein there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound.
 - (Webster's) An elevated horizontal surface, as for speakers or at a railroad station.
- **Story**
 - (IBC) That portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above.
 - (Webster's) One of the horizontal divisions of a building.

As you can see from the few definitions listed above, the building code takes the definitions for common words a lot further than those found in a standard dictionary. Additionally, the building code user may have to look further for definitions of terms used within the building code's own definition. For example, see the definition of "dwelling" above. The building code's definition uses the term "dwelling unit," which is clearly defined in the IBC as:

A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

Another consideration to keep in mind is the location in which a term is used. The definition used in one code book may not be the same in another. To exemplify this, take the definition of "canopy." In the IBC, a canopy is defined as:

An architectural projection that provides weather protection, identity or decoration and is supported by the building to which it is attached and at the outer end by not less than one stanchion. A canopy is comprised of a rigid structure over which a covering is attached.

However, the *International Fire Code (IFC)* published by the same organization as the IBC, the International Code Council (ICC), defines a canopy in a completely different manner:

A structure, enclosure or shelter constructed of fabric or pliable materials supported by any manner, except by air or the contents it protects, and is open without sidewalls or drops on 75 percent or more of the perimeter.

So, under the IBC, a canopy can only be attached to a building and is considered an architectural projection, whereas, the IFC may consider it to be a free-standing structure since it defines it as being supported "by any manner." To explore the varied definitions between codes, here's the definition of a canopy from the *NFPA 5000, Building Construction and Safety Code*:

Any fixed roof-like structure that is self-supporting in whole or in part, but having no sidewalls or curtains other than valances not exceeding 18 in.(457 mm) in depth.

As you can see, this definition is slightly different than that found in either of the two International Codes, but it is more closely aligned to the definition in the IFC. But, one structure qualifying as a canopy under the IFC might not qualify as a canopy under the NFPA 5000, and vice versa. This emphasizes the fact that the code user needs to review the definitions applicable to the specific code being used.

In a general observation, the IBC has made one improvement over the UBC in the area of definitions; and that is listing every term defined by the building code in Chapter 2. Even though the definition for a term may not be provided in this chapter, it at least directs you to the chapter where the definition can be found. This helps the low cognitive-potential people to find those obscure definitions quickly; I know it has helped me (oops!).

For a building code to be effective, it must communicate its intent to the user in clear, concise language. Words may have different meanings attached to them; some accepted by all, while others may have a regional influence. To ensure that the building code is enforced similarly, whether it's in Alaska, Maine, or Arizona, building officials, architects, contractors, and owners need to be given the context in which every term is used. Vague and imprecise terms would lead to a broad range of interpretations that could inadvertently result in unsafe building conditions. Therefore, knowing the exact definitions of code terms, and the circumstances in which they're applied, are essential in administering an effective building regulation program.

The End

(The point at which something ceases; conclusion)

¹ *Webster's II New Riverside Dictionary*, Berkley Publishing Group, New York, 1984.

To comment on this article, suggest other topics, or submit a question regarding codes, contact the author at ron.geren@gouldevans.com.

About the Author: Ronald L. Geren, RA, CSI, CCS, CCCA is the specification writer and code reviewer for the Phoenix Office of Gould Evans, and is an ICC Certified Building Plans Examiner. He is a 1984 graduate of the University of Arizona, and has held various technical and managerial positions for military, state, and private agencies.

LEED Project Update – CCSN Telecommunications

Stephen J. Andros, AIA/FCSI/CCS/LEED-AP

The Morse Arberry Jr. Telecommunications Building at the Community College of Southern Nevada Charleston Campus in Las Vegas, Nevada is the first state approved design-build project in Nevada, and one of the first buildings in that state to receive LEED-NC certification. The 2 story, 87,000 square project completed in September of 2004 has been designed to be a timeless design that houses electronic technology which is constantly changing. Classrooms are adjacent to a central "spine" that provides easy access to the shared equipment. The building also houses a television studio for training purposes. The exterior façade of concrete tilt up walls are screened with architectural metal panels and architectural stone veneer. Natural light covers 75 percent of the interior space through skylights, reflective screens and windows. Natural light is also piped through solar tubes that work with a series of lenses and prisms to capture and channel natural light into the classrooms on the second floor. Approximately 25 percent of the building is constructed from recycled material including steel framing, asphalt, carpet and other flooring materials. The team also used wheat board and low VOC glues sealants and paints to minimize harmful emissions.

One of the primary obstacles to overcome was that this was also one of the first LEED projects in Las Vegas and the Owner and the Design-Build team required education in the use of the LEED rating system. Several workshops were conducted throughout the design and construction to provide the training necessary for a successful LEED project. The project was also designed on a site that previously served as parking lot for the campus and therefore extensive site work demolition and utility relocation was required.

Energy modeling (including daylight modeling and assistance with building commissioning and measurement/verification) for the project was provided by The Weidt Group. By providing energy conservation strategies during design, it was possible for the building to achieve a 35% reduction in energy costs compared to ASHRAE 90.1. Much of these savings were achieved through lighting design that recognized the daylight contribution of the windows and solar tube skylights which actually reduced the air conditioning requirements.

Specifications developed by GrEn A/E Consultants addressed each of the LEED prerequisites/credits to be achieved during construction, including the construction waste management, indoor air quality, recycled content, regional materials and low emitting materials requirements. The Architect for the project was JMA Architecture Studios and the Construction Manager/Builder was Martin Harris, both of Las Vegas, Nevada.

Steve Andros is the principal of GrEn A/E Consultants, a green architectural specification and LEED consulting practice with projects in Arizona, Nevada and throughout the US. Steve's primary service to the design and construct team is advocacy and education about green building issues and methods through the use of "green specifications." Information about "GrEn-Spec" and other services available can be found at www.grenspec.com

ROOFING FYI

George Wadding
Star Roofing

Although gas prices may have receded in recent weeks, it appears that roofing prices for 2007 are headed up. While it is true that gas and asphalt both come out of crude oil the relationship is a complex one. Asphalt is a “bottom” end or by-product of the refining process with the amount varying depending on the type of crude oil. So-called “light” crude produces less than 10 percent asphalt; “heavy” more like 30%. Because of recent higher prices for gas and diesel, refiners are likely to add specialized equipment which can increase the yield of fuels and decrease correspondingly the asphalt yield.

Even with the just-announced price increases in asphalt, the profitability of fuels, even though prices are down, is still much greater. Increased profitability in asphalt production is unlikely to change the long-term plans for such equipment, since it is years from decision to production and once the go-ahead is given, the die will be cast. Further complicating the picture is the fact that Venezuelan crude provides about 25% of roofing asphalt feed stock for the US and the current Venezuelan government has been threatening to use their oil as an economic weapon.

The most logical conclusion to be drawn from this is that asphalt roofing prices will increase whether gas is high or low. Coupled with Dow Chemical’s announced increase for MDI and TDI, the polymers used in single ply membranes and urethane insulation and sprays, will increase costs, and if the recent past is an indicator, add some possibilities of reduced availability.

It seems to this observer, that the days of cheap, “throw-away” roofs are behind us and higher quality and more readily maintained roofs should be carefully considered in future building design.

About the Author: George R. Wadding CSI, Phoenix Chapter President is an estimator\project manager with Star Roofing. A long-time member of Phoenix Chapter of CSI having held various responsibilities over the years. He has been involved in the construction industry in Phoenix since January 1960 and served two terms as President of the Arizona Roofing Contractors Association and served as Chairman of the ASUNACE Subcontractors Forum.