

## **MORE THOUGHTS ON THE ECONOMY**

By Doug Hartman



Who could have predicted the impending economic meltdown of 2008 and the painfully slow recovery of 2009? While all the hopeful signs are there for a better 2010 with the stock market now over 10,000 and climbing, real estate prices stabilizing, and interest rates at historically low levels, we are still not out of the woods. Texas has not experienced 10% across-the-board unemployment, but our industry has suffered much worse. Many A/E firms are ¼ to ½ the size they were in 2007, and recent statistics about contractors indicate that nearly ½ nationwide have just folded their tents. The unfortunate long term impact of all of this is that we are losing a lot of talented people to other industries.

Many firms, however, are holding their own and some are even growing. Diversity in project types seems to be the key, as well as being fortunate enough to have experience in medical, higher education, and government projects, which are prominent now.

It seems to me, however, the key to economic growth is not in government subsidized construction spending, but in encouraging lenders to restore reasonable equity participation by borrowers. I have heard recently on owner occupied projects, lenders were requiring double or triple the equity from pre-2007 levels; and on speculative projects borrower equity of up to 50% is not uncommon. No borrower, especially developers, would sink that kind of money into a project. Another key to sustained recovery is the confidence that companies must have before they will commit to hiring and expanding their businesses. And this is a classic "Catch 22" –no growth, no confidence. Let's all keep our fingers crossed for a better 2010.

## **CITY OF DALLAS ENACTS GREEN BUILDING PROGRAM**

By Doug Hartman

In keeping with the City of Dallas' efforts to lead, not follow, in encouraging sustainable design and construction practices, the City implemented its Green Building Program on October 1, 2009. Since then, not only will projects publicly funded by the City need to achieve a level of sustainability, but all commercial and residential projects will need to demonstrate compliance. Key elements in the requirements for commercial projects include:

14-15% (depending on size of project) reduction in energy consumption below 2006 IECC.

20% reduction in water consumption below 1992 EPA Act

Cool roof required on roofs of 2:12 slope or less.

Restrictions on outdoor lighting, and

For buildings 50,000 s.f. or larger, achievement of at least 85% of credits toward a LEED certified level (ie, at least 22 credits on an NCv2.2 checklist).

Note: It is our understanding that pre-requisites may be included in the 22 credits. Not sure how this will translate to LEED 2009 credits.

And, on October 1, 2011, all commercial projects (regardless of size), must be LEED certifiable.

For more information, including download links for the actual ordinance and a power point presentation summarizing the process that lead to the ordinance, log onto to [http://www.greendallas.net/green\\_standard.html](http://www.greendallas.net/green_standard.html). Also, the City has developed a credit checklist which must be submitted at time of permitting where you can identify the credits you intend to achieve.

## **BETTER SPEC-DRAWING COORDINATION WITH e-SPECS FOR REVIT**

By Doug Hartman

In an effort to offer our clients state of the art coordination between drawings and specifications, we have purchased add-on software for Master Spec called e-SPECS for REVIT. This software converts Master Spec files into an interactive data base which recognizes and applies product and material terminology within the REVIT program to the specifications data base. The result is a seamless, behind-the-scenes, coordination between two programs, minimizing the problems of inconsistent terminology and materials/products shown on the drawings but without a respective specification section. We are still in a learning mode with this software, but anticipate being able to offer this enhanced coordination by the end of the first quarter of next year.

## PROJECT COMMISSIONING

By Michael Smith, LEED AP



Whether or not a project is going for a sustainability certification, commissioning should be considered as a valuable part of the overall project from design programming through occupancy by the owner. The areas of commissioning should be, but are not limited to HVAC and controls, Lighting and Daylighting controls, Domestic Hot Water and Renewable Energy systems. Energy modeling should also be considered. Many believe this should be included in “Basic Services” provided by the design team. It is through this process that the owner can establish up front what his expectations are for the project and define a clear path throughout the evolution of the project to meet the requirements. This could potentially reduce liability for the design professional by having a consultant in place that analyzes important decisions made along the way and save the owner money in the long run.

In the beginning, the owner should indicate their expectations of systems performance and energy usage. Identify any environmental and sustainability goals, indoor environmental quality, and who will be maintaining the systems. The Design team in return develops a strategy to incorporate the owner’s requirements into the project. A commissioning agent can be the third party to step back and take a look at the project as a whole and provide objective advice. This consultant could not only help integrate the approach into construction documents, but also be a third set of eyes reviewing construction submittals, verifying installation and operation of systems, and assist in training of the owner’s personnel that will be maintaining the systems.

An energy model could be an invaluable tool in the successful completion of a project. While it is not absolute, but relative, it helps make the most informed decisions, helps to determine what the best skin might be, which mechanical system is most appropriate and how the system is to be used.

Where a commissioning consultant is to be used, careful consideration should be used in selecting the team member. Currently there is no certification or registration requirements for this field, therefore education or experience requirements are not set in place. There is no governing board overseeing this relatively new area of consulting. The person selected should be knowledgeable of all commissioned systems and have a good deal of experience under their belt. There are several different software systems for energy modeling and the results for one project will differ depending on which application is used. A person with modeling experience should be able to explain which software is being used and why that software was chosen.

One might think the type of service a commissioning consultant would provide could be done by other members of the design team. As design professionals, we consistently review our own work for accuracy. That second set of eyes could be valuable in providing objective comments on how building assemblies and building systems might be best utilized. Many times we rely on the contractor who installs building systems to provide information that the operation of equipment is performing as planned. While this probably has worked many times in the past, it is like asking the artist to critique his own work.

Many suggest having the building re-commissioned in two years. This determines if the owner’s original objectives are being met. Personnel that maintain systems tend to create their own solutions to solve problems. Adjustments are made to systems from complaints, work orders, “to put out fires”, manually override system settings, etc. A re-review can determine if adjustments or modifications need to be made.

While we mostly see commissioning consultants used on projects seeking sustainable certification, one should consider the value added to any project by having a person on board that could offer constructive advice. This path that adds an additional team member to the table could be in the best interest of not only design professionals but the owner and end users as well.

## Going the extra **GREEN** mile

By Allen Cornett, LEED AP

With the ever growing green movement, more and more products and services are becoming available. Some of these products and services can be tailored for use in attempting Innovation and Design credits for LEED certification, or they could be options for those looking to go the extra GREEN mile.



Even if your current space is not LEED certified, there are environmentally friendly opportunities for products and services required to conduct business. Some may be familiar with Organic Landscape Maintenance or Green Housekeeping programs, but less familiar options include:

- Organic pest control
- Floor sealers, waxes, stripper and finishes
- Toilet room hand cleaners
- Break room and toilet room paper products
- Office paper products
- Office electronics and appliances
- Office furniture

With some of the products available, not only are the products environmentally friendly, but the manufacturing and distribution of the products is done in an environmentally friendly manner.

For more information on the growing products and services available log onto:

<http://www.greenseal.org/>

<http://www.greenguard.org/>

<http://www.extremelygreen.com/pestcontrol/guide.cfm>

<http://www.energystar.gov/>

[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductCategory&pcw\\_code=OEF](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductCategory&pcw_code=OEF)

[http://www.energystar.gov/index.cfm?c=appliances.pr\\_appliances](http://www.energystar.gov/index.cfm?c=appliances.pr_appliances)

# AIR BARRIERS MORE THAN JUST BUILDING WRAP

By Kevin Wang

Understanding the benefits of air barriers in building construction is fairly simple. Conditioned air on the interior is kept separate from unconditioned air on the exterior, minimizing unnecessary heating and air conditioning loads, minimizing the likelihood of mold growth, and reducing the infiltration by contaminants. While the most visible air barrier material in recent years has been building wrap, it is only one of several options presently available. Various aspects should be taken into account before selecting an

air barrier system for each project. Material cost, vapor permeability, installation procedures, exposure, and environmental conditions are all considerations when selecting an air barrier material. The Air Barrier Association of America (ABAA) has classified three main types of air barrier materials: Mechanically Fastened, Self Adhered Sheet, and Fluid-Applied.

Building wrap is a type of mechanically fastened air barrier. It is typically a spun, non-woven polyolefin/polyethylene film, acting as an air and moisture barrier while remaining vapor-permeable. Proper installation typically includes taped seams and capped fastener heads. Building wrap's appeal is in its relatively low material cost and ease of installation. Also included

in the mechanically fastened category is boardstock material. Presently the ABAA has not released recommendations on specific boardstock air barrier products. Boardstock materials include traditional building materials, such as gypsum board, concrete, plywood, and glass.



Fluid-applied air barriers are subdivided into two main classes: Non-foaming liquids and polyurethane foam. Non-foaming liquid fluid-applied air barriers are available in either vapor-retarding or vapor permeable formulations of elastomeric bitumen or cold vulcanized synthetic rubber polymers. Additionally, there are UV-resistant fluid-applied air barriers available for semi-exposed applications, such as behind rainscreen system wall panels. Polyurethane foam is not only a vapor-retarding air barrier, it is also used as an accessory

transition material in air barrier systems comprised of other materials, such as non-foaming liquid and self-adhering sheet. Fluid applied air barriers provide the benefit of a monolithic membrane which is bonded to the substrate material. Additionally, Non-foaming liquid air barriers also have elastomeric qualities, allowing the substrate some measure of movement without compromising the integrity of the membrane.

Self-adhered sheet air barriers are generally comprised of an SBS-modified rubberized asphalt compound bonded to a cross-laminated layer of polyethylene, synthetic fibers, or polyester. They are available in vapor-permeable and non-permeable options. Self-adhered sheet air barriers have high tensile strength, are applied in a peel and stick manner, and do not require priming of the substrate except over precast concrete and CMU. The cost is also less than that of fluid-applied products, and they require fewer steps to install than mechanically fastened air barriers.

Ultimately, there is no one air barrier material which should be used on every project. Each material's specific traits should be carefully considered along with the particular project characteristics before making a selection. The ABAA website has a great deal of information and is a great resource: [www.airbarrier.org](http://www.airbarrier.org) Also, the various manufacturers of air barrier materials and systems are good sources to learn more about the particular advantages of the different choices.

## Manufacturers:

Carlisle Coatings and Waterproofing  
Cosella Dorken  
Dow Building Solutions  
DuPont – Tyvek  
Fortifiber Building Systems Group  
W.R. Grace & Co.

Henry Company  
W.R. Meadows  
NEI  
PROSOCO  
Protecto Wrao Co.  
Raven Industries

Reef industries  
Rubber Polymer Corporation  
Tremco Sealants & Waterproofing  
Tygar Construction Products  
Vaproshield

Don't forget to perform a dew point calculation to determine if a vapor permeable or vapor retarding air/moisture barrier is required. Generally, in our climate, a vapor permeable barrier is preferred, however, in hot and humid climates where the "warm in winter" side of the wall is normally outside the sheathing, a vapor retarding barrier may be a better choice, provided there is no other vapor barrier in the wall system that would cause moisture to be trapped.

## **USGBC REGISTRATION FEES TO INCREASE JANUARY 11, 2010**

Registration fees for LEED certified projects payable, to USGBC, at time project is registered, will double on January 11, 2010. Fees for USGBC members will increase to \$900. Fees for non-USGBC members will increase to \$1,200.

## TAS UPDATE

By Mike Ranalletta, RAS

In September of 2009, the Texas Department of Licensing and Regulation (TDLR) changed the amount of days, that an Architect, Designer or Engineer having overall design responsibility, from 5 to 20 days to submit plans to TDLR or a Registered Accessibility Specialist (RAS). I know a lot of design professionals breathed a huge sigh of relief when given the extra 15 business days to submit plans. A small victory in a business of tight deadlines.



Also, there may be some confusion about who to send the Proof of Submission form (AB-042 09-09) to when completing the registration process and submitting drawings to the reviewer. The Proof of Submission form clearly states to send a filled out Proof of Submission form along with the set of drawings to the reviewer. After the Plan Review is completed, the form is included with project update correspondence to TDLR. TDLR will also accept a completed form if sent directly to them.

### Editable Forms

More good news! Email me at [mranalletta@inspeconline.com](mailto:mranalletta@inspeconline.com) and I will send you an editable version of Inspec's Project Submittal form and TDLR forms needed to register a project.

## “Cold Formed Metal Framing” vs. “Non-Structural Metal Framing”

By Steve Brown

Continued confusion over the difference between cold formed metal framing, commonly called “steel studs”, and non-structural metal framing, often referred to as “metal studs” has been ongoing for years. The issue is typically evident where the framing used for the exterior envelope, and that used for the building’s interior gypsum wallboard partitions are both referred to as “metal framing” or “steel studs” in the Drawing notes. Review of the differences between these two forms of metal framing is important for clarifying the issue and moving toward eliminating confusion.



“Cold formed metal framing” is structural framing, specified in Division 5, Section 054000. Fabricated from roll formed structural grade steel sheet it can be used to frame walls that are subject to axial and/or lateral loads, interior, exterior, load-bearing, non-load bearing and non-load-bearing curtain walls. Floor framing, roof framing and related detail elements may also be fabricated from cold-formed metal framing.

“Cold formed metal framing” materials are commonly specified as steel sheet, structural grade 50 Type H (ST50H) or Type L (ST50L), in accordance with ASTM A1003/A. It should be noted that several structural grade sheets are referenced in AISI’s Specification for framing members, (AISI - American Iron And Steel Institute – “Cold Formed Steel Design Manual”), however AISI’s General Provisions requires steel sheet that complies with ASTM A 1003/A 1003M.

“Non-structural metal framing” is not structural framing and is specified in Division 9, Section 092216, or with the gypsum wallboard in Section 092900. Fabricated from roll formed non-structural grade steel sheet, it is used to frame interior, non-load bearing walls. “Non-structural metal framing,” is specified as steel sheet complying with ASTM C645, “Specification for Nonstructural Steel Framing Members”, which requires steel sheet meeting ASTM A1003/A, non-structural Grade 33 (NS33). “Non-structural metal framing” is not designed to support axial floor or roof loads, however it can support minimal transverse loads such as those applied by the building’s HVAC system, or elevators moving through a shaft way, without exceeding allowable loading stresses or deflection limits. ASTM C 645 defines a nonstructural metal framing stud as a “member in a steel framed wall system which is limited to a lateral (transverse) load of not more than 10 lb/sq. ft., or a superimposed vertical load, exclusive of sheathing materials, of not more than 100 lbf/ft.”

Resolving any confusion regarding “cold formed metal framing” and “non-structural metal framing” is best accomplished by the doing the following:

1. Understanding the difference between “cold formed metal framing” and “non-structural metal framing” in terms of both function and physical qualities.
2. Coordinate the drawing notes with the project specifications by assuring that the proper sections are included in the specification.
3. Coordinate terminology used to identify the framing material in the Drawings with those used in the specifications by using the same material identification in both places.

## INSPEC

3737 Mapleshade Lane  
Plano, Texas 75075