



Do You Have a Client Who Wants a LEED Certified Building?

Doug Hartman

Don't panic! It's not rocket science, but it does take understanding on the part of the owner, contractor, and design team members.

While LEED certified buildings were a rarity 10 years ago, we are finding many clients are being thrown into the process by their building owner/developers for the first time. Pressure from governmental agencies, competitive marketing (as in office buildings and residential buildings) and big corporations are pushing the sustainable design and construction movement along and the results are nothing short of amazing.

Product manufacturers are aggressively developing new products that have high recycled content and low VOCs making our job of specifying sustainable products easier. The City of Dallas recently passed (following the City of Austin's lead) requirements that will mandate some level of sustainable effort be made in the design of any building within the city limits (extent and impact of this has yet to be determined). And CSI is coming up with a new tool (called GreenFormat) to help manufacturers catalog, and design professionals evaluate, a product's true carbon footprint.

A few suggestions if you are just starting (or contemplating) your first LEED project:

1. Start early (even before the site is selected, if possible) to begin evaluating what credits are available.
2. Surround yourself with consultants (MEP, civil, landscape) and a commissioning agent who have successfully worked on LEED products and can guide you in the process.
3. Make sure your owner acknowledges that the cost for a LEED certified building will be more and that the additional fees for you, your consultants, the commissioning agent, the contractor, and hard dollar construction costs will likely require at least a 3-4% budget increase, depending on the level of certification desired. These additional costs, however, will likely be recovered in the first 2-3 years of building ownership, so it is important for them to understand it is an investment which will continue to pay dividends each year of ownership.
4. As with your consultants, encouraged the owner to select a contractor who has a couple of LEED projects under their belt. In the case of bid procurement, such experience can be evaluated just like hard dollar bids by using the CPS (competitive sealed proposal) method of requesting and evaluating bidders. An experienced contractor is less afraid of the process and will be less likely to pad the budget for unknowns.
5. Incorporate LEED documentation requirements into the contract documents (especially the specifications) to ensure the contractor understands their part in preparing and collecting needed documentation. We are in the process of seeding LEED language in each technical section (in addition to the sections in division 01) to ensure each subcontractor acknowledges their role and responsibility in preparing and collecting documentation.
6. And last, but not least, encourage one of your staff to become a LEED accredited professional so they can assist in the sustainable design process, and perhaps serve as the person guiding the LEED process. If you are not ready to assume this role or would prefer to retain an outside consultant, INSPEC staff are available to serve you in this role. We are currently serving as the sustainable design consultant on 9 projects and intend to add experienced staff next year to ensure we maintain the highest level of service.

Building Code Effect on Construction Detailing

Doug Hartman

In their infinite wisdom, code writing authorities continue to legislate "good design" into the model building codes, but sometimes are based on old technology. Nonetheless, it is important to seek out obscure code requirements and incorporate them into your construction documents to avoid costly changes during construction. Occasionally these requirements are found by our clients and brought to our attention, and for this reason, we are always open to questions and comments about the specifications we prepare in our on-going effort to keep them as current and accurate as possible.

Here are a few examples.

The IBC requires a moisture barrier behind exterior cement plaster wall veneer. However, it goes further and declares this must be equivalent to 2 layers of grade D asphalt paper (2510.6). This technology, while adequate, does not, however (in some building officials minds), allow newer technologies to be utilized, such as fluid applied and sheet moisture barriers which also bring air barrier qualities. Fortunately, most building officials allow alternate compliance means, including reduction to one layer of moisture protection for the higher performing products. But – it is important to confirm what the local building official will allow before the material choices are made.

The IBC also now requires that all low slope roof flashing and terminations (generally applies to gravel guards and parapet caps) be designed and installed in accordance with a test standard ANSI/SPRI ES-1 (1504.5). This is a wind uplift test and is now required as it has been determined that a primary source of roof related failures occurs first at the edges and terminations. The test is quite expensive to conduct, and it is our understanding that most "mom and pop" sheet metal shops (those who customarily fabricate such items for our
Continued Page 3 Building Code



Following the LEED

Kevin Wang

By now, you are probably already familiar with LEED (Leadership in Energy and Environmental Design). For those of you who are not, it is a quantitative rating system issued by the US Green Building Council to

govern environmentally sustainable building and design. To date, over 14,000 LEED certified projects have been built in all 50 states and 30 countries worldwide. Several local jurisdictions, including the City of Dallas, have already mandated minimum LEED certification on certain project types. In short, sustainable design is here to stay.

LEED certification is available at different levels, depending on how many credits are earned for certain aspects of sustainable architecture on a project. A project meeting minimum credits can qualify for the LEED Certified level. Beyond that, are Silver, Gold, and Platinum levels. Many of the available credits are not simply for using green building materials. Credit points are available for a variety of items, whether selecting a site convenient to public transportation, maintaining a smoke-free building after occupancy, minimizing the heat island effect of the overall site, or having a LEED Accredited Professional as a principal participant on the project team. Of course, the items that more readily come to mind still apply, such as sealants and coatings with zero- or low-VOC (volatile organic compound) content, certified wood products not from old-growth forests, rapidly-renewable resources, recycled content, and regionally extracted, processed, and manufactured materials.

What this means is that the overall environmental impact of a building project is considered as criteria for certification. The process must thus begin at the project's inception. Before anything is drawn (or modeled), the commitment to LEED certification must already be made. Sometimes a building owner will ask an architect to pursue a level of certification during the Construction Documents phase. At this point it is likely too late to have everything fall into place. There are far too many possible credit points that are very likely already unattainable at this point. Thus, for the architect, it is paramount that the commitment to pursue certification be made at square one.

It is also possible to set out to achieve a minimum number of credits to reach a certain certification level, but fall short when the project is completed. For this reason, a good plan of action is to overshoot the intended number of minimum credits in case some of them are missed. The reason for doing so is that the criteria for awarding many credits are based on a percentage of the overall project cost. No one product, no matter how environmentally friendly its manufacture or use, can ensure any one LEED credit. Everything is dependent on the impact each component has on the project as a whole. At this point, LEED submittals come in. It is a simple matter to instruct the contractor to use certified wood, low-VOC paints, and recycled steel framing. However, without proper documentation of these items there can be no verification and, therefore, no credit. The process of producing a LEED certified project thus begins before the beginning and ends after the end of the project.

All that being said, perhaps it is not worth it to an owner to pursue a LEED certified project. This does not necessarily mean that all of these philosophies should be abandoned. Many of the available credits do not necessarily have an associated monetary cost. Keeping in mind certain design features can help make a building more environmentally friendly. For instance, increasing the amount of usable daylighting in a building is

possible without a significant cost increase if it is considered from the beginning of the design process. On the other side of the coin, an architect might decide to go with greener products in lieu of traditional, less earth-friendly ones. For this purpose, specifications can be tailored to include environmentally preferable products (EPP). Rather than exclude traditional products and materials, which can become costly, the specifications instruct the contractor to use EPPs to the greatest extent possible. This solution offers the option of including some sustainable materials without overly driving up the project cost. Many owners and local jurisdictions are opting to go this route, including the City of Austin, Texas, and its Austin Energy Green Building program.

The movement to go green is not going away. In fact, it is highly likely that within the not-too-distant future there will no longer be LEED certification, but that a minimum level of sustainability in design will become a mandatory requisite by building code. There are already some architects who now include sustainable design requirements on all of their projects as a rule. All indications point to the eventual incorporation of green building and design into the overall body of architectural expertise. It is an exciting time to be a participant in the field as it takes the next step and evolves into the 21st century.

For more information about LEED go to <http://www.usgbc.org/>.



TAS News

Mike Ranalletta

Now that we've had about 8 months to get familiar with the new forms issued by TDLR in April of this year, one thing is apparent: Most of the time - I can't put a percentage on this but it's fairly high - the Owner Agent Designation Form (AB043 03-07) is not used. The only two forms actually requiring the Owner's signature are the Architectural Barriers Project Registration Form (AB05 03-07) and the Request for Inspection Form (AB041 03-07). If you can get the Owner to sign the Architectural Barriers Project Registration Form, you should also have the Owner sign the Request for Inspection Form at the same time. If for some reason the Owner wants to designate someone as its Agent, the Owner Agent Designation Form can be included with the other two forms for the Owner's signature. These forms are available on the TDLR website, www.license.state.tx.us, or you can contact Joan, Valerie or myself and we can send them to you either by mail, fax or electronically through email in Adobe format.

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Carpet Recycling

Carpet doesn't belong in landfills. Hopefully you know about the Carpet America Recovery Effort (CARE) which is a joint industry-government effort to increase the amount of recycling and reuse of post-consumer carpet and reduce the amount of waste carpet going to landfills. CARE was established as a result of a Memorandum of Understanding for Carpet Stewardship (MOU), a national agreement signed by members of the carpet industry, representatives of government agencies at the federal, state and local levels, and non-governmental organizations. Visit www.carpetrecovery.org to locate carpet reclaimers in your local project area and determine their reclamation procedure requirements. Over 300 million pounds of carpet have been diverted from landfills since 2002.



Wrought Iron Or Mild Steel?

Rhonda Lisa Sellers

What do you really, really want - "wrought iron" or "mild steel"? Centuries old wrought ironwork

is still in existence due to its greater corrosion resistance resulting from its carbon content of less than one percent, its fibrous nature, and the noncorrodible slags inherent in its structure. Unfortunately, wrought iron formed by heating and hammering is no longer in wide production. We may still hear the term "wrought iron" when speaking of ornamental metalwork to indicate a desired style or appearance; however, today most products are of mild steel and cast steel, which are malleable and weldable. A few may be of cast iron. With the introduction of mild steel in 1856, wrought iron and its related laborious and tedious craft skills gradually faded due to a shift to mild steel and the ability to mass produce and weld mild steel. Blacksmiths are learning the old skills using traditional methods and materials both for restoration work and for new fabrications. Wrought ironwork is not a totally lost art, thank goodness; but for most projects, unless wrought iron restoration work is required, welded mild steel is more often the material of choice due to availability and significantly lower cost.

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buildings) have not conducted such tests on their fabrications. For this reason, we have taken the posture that only those companies who have successfully performed such testing will be included in our specifications. Such companies fabricate what we refer to as pre-formed, pre-engineered roof termination devices and include companies such as WP Hickman, MM Systems, and Metal-Era. These devices are certainly an upgrade to local shop fabrication and carry additional cost.

We have also heard from a vertical transportation consultant at the CSI convention last summer that some of the new elevator hoisting methods (i.e. machine room-less) employ alternate means other than roped cables and that some building officials will not approve systems that use reinforced belts. Better to check with the local building official before we are asked to specify one of these systems.

Lastly, an obscure reference in the IPC states that the waterproofing membrane in tiled showers must be not less than 40 mil PVC. This product can only be used under mud set tile, and if the code is interpreted literally (as the City of Dallas has), it then prohibits the thinner sheets and fluid applied membranes that we typically specify in thin set shower floor tile applications. The City of Dallas has allowed alternate material, but only after special precautions are taken. Again, check with the local building official for clarification before you decide on materials.



MasterFormat 04 – Are We There Yet?

Steve Brown

We proclaimed last year at this time that we would begin using MF04 as a standard around which we would organize our specifications, but as the year progressed, we found the conversion more difficult to implement that expected. We also found several

clients (and their clients) who had a preference for the old section numbering system. We have now implemented a new data-based specification editing program (SpecLink by BSD) that allows relatively seamless transition from one to the other, allowing this choice to be made on a job by job basis. Our intent now is to follow through with implementing the MF04 system, but we can still revert back to MF95 should you desire.

While many of us long for the day when the 5 digit, 16 division numbering system (one which many of us spent 30 years or longer learning) was still the standard, we need to complete this transition, as the specification editing programs (SpecLink, MasterSpec, SpecsIntact, Arcat, etc.) as well as product reference documents like Sweets and most cost estimating programs, will no longer be published in the old format. Likewise, many state and federal governmental agencies now require the new format on their projects.

If you can't find something in the new format, you are not alone. Many things were moved within a division seemingly for no reason. Here is a refresher of the most significant changes:

Sitework was moved from Division 2 and spread out over new Divisions 31 (Earthwork), 32 (Exterior Improvements), and 33 (Utilities). Note that these now occur after the MEP sections.

Mechanical Division 15 has been abandoned and the contents now spread out into Divisions 21 (Fire Suppression), 22 (Plumbing), and 23 (HVAC).

Electrical Division 16 is now called Division 26.

Integrated Automation now has its own Division (25), as well as Electronic Safety and Security (Division 28), and Communications (Division 27).

Louvers has moved to Division 8 (which is now called Openings), and Expansion Joints has moved to Division 7.

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Distributing Electronic Files

Seems that everyone is distributing electronic drawings files these days. Certainly as backgrounds from the architects to the engineers, and frequently as reference documents to contractors. Most firms charge the cost of distributing the documents to the owner as a reimbursable expense, with a legal disclaimer from the recipient indemnifying the architect. Selling copies to the contractor is bad business as goods fall under different liability protection than do services. Good reason for the indemnification - different software versions and different plotters can produce unexpected results. More importantly, when a contractor receives an electronic file, they expect that it is up to date with all the addenda and change orders incorporated. As many design firms don't keep their electronic files up-to-date with change orders (why would they), we've heard of several cases where shop drawing submittals were rejected, even materials that have been fabricated incorrectly and rejected at the jobsite - at great expense!

Division Numbers and Titles

PROCUREMENT AND CONTRACTING
REQUIREMENTS GROUP:
DIV. 00 Procurement and Contracting Requirements

SPECIFICATIONS GROUP:
GENERAL REQUIREMENTS SUBGROUP:
DIV. 01 General Requirements

FACILITY CONSTRUCTION SUBGROUP:
DIV. 02 Existing Conditions
DIV. 03 Concrete
DIV. 04 Masonry
DIV. 05 Metals
DIV. 06 Wood, Plastics, and Composites
DIV. 07 Thermal and Moisture Protection
DIV. 08 Openings
DIV. 09 Finishes
DIV. 10 Specialties
DIV. 11 Equipment
DIV. 12 Furnishings
DIV. 13 Special Construction
DIV. 14 Conveying Equipment
DIV. 15 Reserved for Future Expansion
DIV. 16 Reserved for Future Expansion
DIV. 17 Reserved for Future Expansion
DIV. 18 Reserved for Future Expansion
DIV. 19 Reserved for Future Expansion

FACILITY SERVICES SUBGROUP:
DIV. 20 Reserved for Future Expansion
DIV. 21 Fire Suppression
DIV. 22 Plumbing
DIV. 23 Heating, Ventilating, and Air Conditioning
(HVAC)
DIV. 24 Reserved for Future Expansion
DIV. 25 Integrated Automation
DIV. 26 Electrical
DIV. 27 Communications
DIV. 28 Electronic Safety and Security
DIV. 29 Reserved for Future Expansion

SITE AND INFRASTRUCTURE SUBGROUP:
DIV. 30 Reserved for Future Expansion
DIV. 31 Earthwork
DIV. 32 Exterior Improvements
DIV. 33 Utilities
DIV. 34 Transportation
DIV. 35 Waterway and Marine
DIV. 36 Reserved for Future Expansion
DIV. 37 Reserved for Future Expansion
DIV. 38 Reserved for Future Expansion
DIV. 39 Reserved for Future Expansion

PROCESS EQUIPMENT SUBGROUP:
DIV. 40 Process Integration
DIV. 41 Material Processing and Handling Equipment
DIV. 42 Process Heating, Cooling and Drying Equipment
DIV. 43 Process Gas and Liquid Handling,
Purification, and Storage Equipment
DIV. 44 Pollution Control Equipment
DIV. 45 Industry-Specific Manufacturing Equipment
DIV. 46 Reserved for Future Expansion
DIV. 47 Reserved for Future Expansion
DIV. 48 Reserved for Future Expansion
DIV. 49 Reserved for Future Expansion

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Architectural Statistics

Did you know: NCARB estimates 108,000 architects are licensed in the US; AIA has 81,000 members of which 55,000 are licensed and the rest affiliate members; there are 17,640 architecture firms owned by AIA members with gross billings of \$ 29 billion in 2005 producing \$400 billion in construction contract value. In the US, 66 percent of construction is for new buildings, 34 percent for rehabilitation/renovation projects. Architecture firms employ approximately 194,000 people in the US. Firms with over 50 employees constitute 4 percent of firms but account for over 50 percent of gross firm billings.

FM Global Revises Roofing Requirements

If the building you are designing or specifying is insured by a Factory Mutual affiliated insurance company, your new roofing design and specs must change. In response to losses caused by hurricanes, FM Global has updated their Loss Prevention Data Sheet 1-29 "Roof Deck Securement and Above Deck Roof Components" to tighten the perimeter and corner securement requirements for adhered roofing assemblies over steel or concrete decks where the insulation is mechanically attached. Datasheet 1-29 is available from their website, www.fmglobal.com, or you can contact your local roofing company representative.

Schedules in CSI MasterFormat 2004

In recent years it has been common to see Section 08000 - Door Schedule and Section 09000 - Finish Schedule in the specs instead of on the Drawings. The schedules are prepared in a word processing file and it is easier to issue them in the spec rather than import the file into a CAD program. With CSI MasterFormat 2004, schedules have a listing in each division, for example Section 08 06 00 is the Door Schedule and Section 09 06 00 is Schedules for Finishes.

New AIA Contract Documents

The American Institute of Architects has updated the AIA Contract Documents to reflect current practices in the industry. Changes in the 2007 Update: The B141-1997 and B152-1997 owner/architect agreements are replaced with AIA B101-2007, a one-part agreement for traditional basic and additional services. Removal of mandatory arbitration - the documents no longer require architects to resolve disputes through arbitration. Additional insureds provisions - contractors will add owners, architects and architects' consultants as additional insureds under their general liability policies. You may purchase the new AIA Contract Documents at www.aiacontractdocuments.org. Unfortunately, AIA A201 no longer uses the term Project Manual, deferring to Drawings and Specifications as sufficient terms for the contract documents. The updated AIA agreement forms enumerate the contract documents by individual name.

Happy Holidays from your friends at
INSPEC

Valerie
Kevin
Dany
Joan
Marie
Steve
Mike
Rhonda

