

KnowHow

the materials and specifications advisor

Journal of Specifications Consultants in Independent Practice

Issue Number 66 - Fall 2007



A Slick Snapshot of Savvy SCIP Specifiers at the 2007 Annual Meeting in Baltimore

First Row: Sheryl Dodd-Hansen, Dane Dodd-Hansen, Dave Metzger, Bob Johnson

Second Row: Dennis Hall, John Regener, David Lorenzini, Nina Giglio, Linda Stansen

Contents:

2006-08 SCIP Officers	2	Streamlining	6	Green Ramblings	16
2007 SCIP Survey Results	3	Building Science	9	LEED Update	19
Manufacturer's Literature	3	Specs and the Law	11	BIM and Specs	22
Tech Notes and Commentary	4	Industry Updates	13	Everything Else	27

Next Annual Meeting: Mark your calendar now for the 2008 SCIP Annual Meeting at the CSI Annual Convention at the Las Vegas Convention Center in Las Vegas Nevada. Subject to last minute jockeying for space, the next SCIP annual meeting will be held on Saturday, June 7; there will also be a pre-convention SCIP sponsored program on Tuesday, June 3. Don't book your plane until you hear from us again!

SCIP OFFICERS 2006-2008

President

DENNIS J. HALL, FCSI, CCS, CCCA, FAIA
Hall Architects, Inc.
501 N. Church Street, Suite 200
Charlotte, NC 28202 USA
OFC (704)334-2101
FAX (704)334-1027
EMAIL dhall@hallarch.com

Secretary

NINA GIGLIO, CSI, CCS
Hall Architects, Inc.
501 N. Church Street, Suite 200
Charlotte, NC 28202 USA
OFC (704)334-2101
FAX (704)334-1027
EM nmiglio@buildinginformationgroup.com

Vice President/Technical

ROBERT W. JOHNSON, RA, FCSI, CCS, CCCA
Johnson and Johnson Consultants, LLC
112 Sangre de Cristo
Cedar Crest, NM 87008 USA
OFC (505)281-6020
FAX (505)281-6019
EMAIL rwj@jandjconsultants.com

Treasurer/Membership

DAVID METZGER, FAIA, FCSI
Heller & Metzger PC
11 Dupont Circle NW
Washington, DC 20016 USA
OFC (202)364-2222
FAX (202)234-5502
EMAIL davem@hellerandmetzger.com

Vice President/Education

LINDA M. STANSEN CSI, CCS, RA
Stansen Specifications
475 23rd Avenue
San Mateo CA 94403
OFC (650)570-6411
FAX (650)570-6411 USA
EMAIL stanspecs@comcast.net

Immediate Past President

JOHN REGENER, AIA, CCS, CCCA
Architect-Certified Construction Specifier
6 Amberwood
Irvine, CA 92604-3102 USA
OFC (949)653-5743
FAX (949)551-0658
EMAIL regener@cox.net

Vice President/Communications

DAVID E. LORENZINI, FCSI, CCS
Architectural Resources Company
212 Brown's Meadow Ct NE
Leesburg, VA 20176-2328 USA
OFC (703)443-2801
FAX (703)443-2354
EMAIL deloren@scip.com

KnowHow Editor

MARK KALIN, FAIA, FCSI, CCS, LEED AP
Kalin Associates
1121 Washington Street
Newton, MA 02465
OFC (617)964-5477
FAX (617)964-5788
EMAIL mkalin@kalinassociates.com

Specifications Consultants in Independent Practice is a nationwide technical resource organization that assists architectural firms, engineering firms, design professionals, agencies, facility managers, and manufacturers in acquiring specifications from qualified writers, and allows independent specifiers to enhance their professionalism by sharing techniques and industry developments.

KnowHow is the occasional publication of the Specifications Consultants in Independent Practice, intended to provide technical and membership information of interest to readers. Opinions expressed in KnowHow are viewpoints of the individual authors and should not be attributed to SCIP. Mention of manufacturer's names or trade practices is not intended as an endorsement of firms, products or construction techniques. Copyright 2007 SCIP. All rights reserved.

Specifications Consultants in Independent Practice, 11 DuPont Circle NW, Washington, DC 20036

SCIP 2007 Member Survey Results

With 45 percent of our 200 members responding, the results are in! Extrapolating the results using semi-scientific methods, SCIP members prepare specifications for over 11,000 projects a year with a total construction value in excess of \$ 145 billion.

1. Number of project manuals produced by your office in 2007:

- A. 0-25 37 % of members
- B. 26-50 30 %
- C. 51-75 8 %
- D. 76-100 8 %
- E. Over 100 17 %

2. Number of client firms (usually 1 for in-house specifiers):

- A. 1-10 45 % of members
- B. 11-20 30 %
- C. 21-30 8 %
- D. 31-40 5 %
- E. Over 40 12 %

3. Approximate construction value of project manuals in 2007:

- A. 0-50 million 10 % of members
- B. 51-100 million 14 %
- C. 101-500 million 37 %
- D. 501-999 million 12 %
- E. Over 1 billion 25 %

4. Percentage of project manuals using 6-digit MasterFormat numbers:

- A. 0-10 percent 45 % of members
- B. 11-25 percent 8 %
- C. 26-50 percent 7 %
- D. 51-75 percent 12 %
- E. Over 75 percent 28 %

5. Percentage of projects seeking USGBC LEED certification:

- A. 0-10 percent 58 % of members
- B. 11-25 percent 28 %
- C. 26-50 percent 12 %
- D. 51-75 percent 2%
- E. Over 75 percent 0%

Manufacturer's Product Literature Distributed with KnowHow

The last time we invited building product manufacturer's to include their product literature with KnowHow, 22 manufacturers sent their info; this time its nearly 100! A special thank you to ARCAT and 4specs for notifying manufacturers about our mailing. On the positive side, much of the product literature is brand new and many of the of the manufacturer's really want the attention of SCIP members. On the difficult side, 20 pounds is a bit much. In any event, we hope you enjoy the custom m&m candies and take the time to review some 'really cool' products. These manufacturers ask for your close consideration.

Tech Notes and Commentary by Mark Kalin

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.

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 17,600 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.

CSI Certification Exam Results In

According to the CSI website, nearly 600 people passed one of CSI's four certification examinations in 2007. The number which passed the nationwide exams for Certified Construction Product Representative (CPR) was 12; for Certified Construction Specifier (CCS) was 31; for Certified Construction Contract Administrator (CCCA) was 100; for Construction Document Technologist was 455! The numbers for CPR and CCS seem very low considering it was a national exam, while the numbers for CCCA show an increasing interest in construction administration and the numbers for CDT are clearly on the upswing.

Long Specs / Short Specs

We recently prepared specifications for three 7-story parking garages for three different clients - a public agency, a private computer company, and a private college. The spec for the public agency was 2,200 pages long; for the computer company 220 pages long; for the private college 22 pages long. The difference? For public bidding, the project manager has only the spec to enforce the contract among the low bidders; for private bidding with teams that have worked together before, negotiated contracts allow for more streamlined specifications; for design/build the spec needs only to communicate to the design and construction team sitting at the same table, joined under one contract.

Teaching Student Specs

Teaching specs at Harvard! Last fall Toshiko Mori, Chair of the Department of Architecture at Harvard University, invited me (Kalin) to teach a course called Architectural Specifications in the Harvard University Graduate School of Design. The course hadn't been taught before at Harvard, but she wanted students to have the opportunity to take courses which bridge the gap between academia and practice. Students have a chance to preview classes before they sign-up, and I guess I made the grade as 19 graduate students registered. Would students in the Masters of Architecture program be interested in specification writing, product selection, navigating product websites, CSI MasterFormat, green specs, specs and BIM? The answer is a resounding YES! In one interactive class, each student wrote an outline specification section - which opened a Pandora's box of the reasons for selecting one material or option over another. It's very heartening for me to know that newly-minted Masters of Architecture graduates will have some of the tools they need to communicate with the spec writers and building professionals they'll meet as they enter practice.

The No. 1 Master Specification

Speakers at the recent CSI Academies and our firm's research confirm that the most widely used Master Specification in the United States is the 'Office Master.' Despite the availability of commercial master specifications systems for governmental and private work, the ubiquitous Office Master leads the pack. While the Office Master is really just a compilation specs from recent projects, frequently out of date, and has no gatekeeper, there are four reasons why it's used: Commercial master specification products are expensive, the 'office master' is readily available in electronic form, the architect/spec writer knows what products are in each section, and finally - the project hasn't been built yet and nothing has gone wrong because of the spec.

Specs Downstream

Who's the first person to use your specs after they are issued? The likely answer is a cost estimator, employed either by an owner, construction manager, contractor or subcontractor. And what is the first thing they do with the spec? We asked several estimators and the responses were very interesting. One design-to-cost estimator just wanted the table of contents from the spec and the schematic drawings. They were preparing a square foot estimate without much detail during schematic design and didn't really need the technical content of the spec. One subcontractor's estimator in a plan room just wanted their section and the drawings. One painting estimator only glanced at the paint section, but looked closely at steel, miscellaneous metals, steel doors and frames, for primers and the extent of shop priming. One construction manager's estimator took the spec, highlighted cost items, and created a spreadsheet for subcontractors. The spreadsheet asked the subcontractor to check yes or no next to each item to indicate if this was included in their bid. Some were temporary facilities items such as scaffolding and construction waste, but others were directly from the spec - submittals for product data and shop drawings, warranties, test results. The spreadsheet also asked the subcontractor which of the specified manufacturers they planned on using, and even asked them to check yes/no next to the tolerances in Part 3 of the spec. One estimator thanked the specifier for including telephone numbers and web addresses in the spec for specialty items. They knew who to call for the major trades, but they appreciated the help when bidding the specialty items. Many times, Google is just of no use.

Save Time Drawing Details

Worried your design team needs help detailing? Many firms rely on standard details developed by technical committees of professional organizations. Some are available in electronic format, others can be 'cut-and-pasted' onto your drawings or referred to by plate or detail number. These are enormous time-savers, and provide the most detailed guidance for your fabricators. Some of the best that you should be using:

Architectural Sheet Meta Manual, (SMACN), www.smacna.org

AWI Quality Standards Illustrated by the Architectural Woodwork Institute, www.awinet.org

CISCA Ceiling Systems Handbook, Ceilings & Interior Systems Construction Association, www.cisca.org

Handbook for Ceramic Tile Installation, The Tile Council of North America, www.tileusa.com

Standard Steel Doors and Frames Fact File, Steel Door Institute, www.steeldoor.org

Exterior Enclosure Details in AutoCAD, Pace Representatives collaborative website, www.pacerepresentatives.com

Your Bid Specs Aren't My Bid Specs

Ever notice members of the construction team don't speak the same language? Bid specs for the architect are the project manual including the conditions of contract, general requirements and technical sections. Bid specs for the subcontractor are a letter from the general contractor with the list of project conditions and technical requirements they are to bid on. Bid specs for the distributor or manufacturer are frequently a list of the products they propose to supply for installation by others, with their own conditions for delivery and payment. Bid specs for the owner are the specs and conditions they put on their reverse-auction website, waiting until no lower bids have been received for 30 minutes. No wonder that the Construction Specifications Institute is working on a thesaurus, and no wonder why its taking so long.

Product Selection versus Specification Writing

One more time for the record: Fake specs result when product selections are not been made by the design team. When a project goes out to bid or for pricing, the design team has worked for months or years, while the contractor or estimator will only have weeks to understand and price the project. The specifier does their best to prepare comprehensive specifications, but what is the contractor to do when the brick is 'as selected by architect,' or the dock lift capacity is 'to be determined,' or when the metal finish is 'selected from manufacturer's full range of standard, custom, premium and metallic colors.' What's the best way to limit the damage? Take your best guess if need be: Brick at \$600 per thousand delivered and unloaded at the site, 6,000 pound capacity for the dock lift, 70 percent Kynar 500 PVDF in silver metallic color range. Even better, start with the manufacturer's specifications or ARCAT SpecWizard and make the major choices presented. The designer can still make other choices, but the cost and schedule impact will be based on what was specified versus what is required, and not a fake spec.

Specs in the Middle East

If you're writing specs for projects in the middle east, a few pointers: Usually reference British Standards and not ASTM standards; metric units only; most products are bought regionally - don't specify US manufacturers unless you're including the name and phone of their middle east distributor; plan your margins differently as specs are printed on DIN size paper 8-1/4 inches by 11-3/4 inches; specify code requirements based on the location of the project, such as Wind Loads - Comply with Local Order No. 3 of Dubai Municipality, BS 6399 Part 1, 1995 or CP3: Chapter V: Part 2: 1972, basic wind speed 45 m/sec.

Streamlining

Eliminate Page Numbering in Table of Contents

A recent sampling of project manuals from architectural firms and independent specification consultant shows the practice of including the number of pages in each specification section in the table of contents has dropped to less than 10 percent of the firms. One answer is that each section already concludes with 'End of Section' and so it is obvious if a partial section is printed. A more realistic answer is that the spec comes together so quickly before printing; that the extra couple of hours adding the page count to the table of contents isn't worth the effort. No one in the sampling indicated they had ever had a problem leaving the page count out.

Eliminate Dates on Standards

Are you still putting the dates of applicable publications and standards in each of your specification sections? Stop! It's a holdover from the pre-internet era. We strongly agree with AIA MasterSpec, which recommends using the following language in Division 1 (Section 014200, par 1.2B) - "Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated." This eliminates the need to research dates for every project. One architectural firm estimated that they save two days production on every project by not having to constantly update the dates of the standards, and frankly no one in the firm could remember when the date of a standard had caused a problem. Also, the engineering consultants didn't follow the same practice in their specs, so half the battle was won or lost already, depending on your perspective.

Organizing Your Library Alphabetically

As CSI MasterFormat 2004 has come on the scene, architectural librarians are faced with new challenges. Reorganize or stay the same? Remove the 5-digit binder labels, and replace with the new 6-digit numbers? Move some building products to a new division? Ask for duplicate copies of binders when a manufacturer makes products that are classified in different divisions? One practical answer: organize your product binders alphabetically. Kalin Associates spec consultants made the switch when they moved several months ago. "No more scanning the shelves for a binder when we already know the name of the company we're looking for", reports a specifier. Even the reps can find their catalogs now. With sites like ARCAT, Sweet's, and 4specs grouping manufacturers with similar products easily, the old advantage of going to the library shelf to find similar manufacturers is outweighed by the ease of searching when information is alphabetical.

PDF Deliverables

The traditional method for issuing a project spec includes receiving printed copies from each discipline, creating a table of contents, and sending one copy to the printer for duplication and distribution. In many architectural offices, the architectural spec writer or project architect prepares the architectural specifications, and the engineering consultants send Word or PDF files of their specs to save the expense of a courier or overnight shipping. Frequently, the engineering files don't print correctly with the margins or the header/footer not matching the architectural spec, or printing half off the page. Worse, the schedule for printing is imminent and the specifier has no time to request replacement files and spends long hours fixing files. One really good way to streamline this process is to request PDF files only from the engineers. If they aren't right - send an email with the requested changes back to the engineer and remind them the printing deadline is imminent. Usually a corrected file will come back very quickly, saving the architectural specifier time. Even better, assemble and email all the PDF files to the printer, as many copy shops prefer to receive files electronically. This is very typical for printing specs where the architect is not located in the same city as the location of the project. The local printer can distribute to the owner and contractor, saving the expense of shipping heavy documents across the country overnight. One overnight shipping company estimates \$900 million is spent in shipping architectural and engineering drawings each year - ultimately costing owners and architect's budgets more than they expected.

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. There is a Section 09 06 00.13 titled Room Finish Schedule, but the firms we know that have switched to MasterFormat 2004 prefer six digits and not eight.

To Do List for Your Project on Hold

Many projects don't run seamlessly from design through construction. It's not uncommon for a project to go 'on hold' for six months or more. Before putting the project to sleep, create a 'to do' list of outstanding issues. There's almost no chance you'll remember all the details after the project has been on hold for a long time, and new team members may join the project and have to start from scratch. Project meeting minutes won't solve the problem. Save yourself some time by creating a quick "To Do List" and store it with the project files. You could organize the list, but stream-of-consciousness writing works as well.

Spec File Names

The computer file name for your specifications can be used to improve your sorting and searching of previous specs. In our practice, a perfect file name is as simple as "08210-Wood Doors" for spec files or "08210rev3.doc" for a file we're working on with a client together. The revision number is advanced one number for each issue. In the first case, we can search for the number or name and when searching throughout different directories, the files sort together. In the second case, the revision number is critical to prevent updating outdated files. If several people are collaborating on updating a file, you can use the 'Track Changes' feature of Word, which will show where the changes have been made. When engineers send us files with their project number first, such as 1006-2006-03300, we have to modify the file name so the document will sort in correct sequence in the project file which may have as many as 150 sections. If you aren't careful how your file sorts in the computer directory, and you email it off to print, the printed copy will likely be out of order.

Spec Directory Names

If you're keeping track of many projects, we've found sorting your prime directory by client, then project name and then spec issue is the most practical way to do it. The specs are all in one directory, with the names of the client firms in subdirectories, and then with the name of the project in a sub-subdirectory. Within the sub-subdirectory for the project we use 00 for administrative tasks (01-proposals, 02-transmittals, 03-correspondence, 04-email, 05-client comments), then 01 for the first issue of the spec for our sections and 01a for any sections by consultants, 02/02a for the second issue of the spec and so on. This way the files sort properly.

MasterFormat 1995 and 2004 Together

As the transition to MasterFormat 2004 is slow to pick up speed in the Boston area, specification consultants have the problem of maintaining master documents in both CSI MasterFormat 1995 with 5-digits, and CSI MasterFormat 2004 with 6-digits. Three approaches for the specifier: 1) Do nothing, stay with 5-digits, retire or wait until BIM takes over. 2) Put both 5 and 6 digit numbers in each of your master sections while using the MasterFormat 2004 titles. Both numbering systems appear in the section opening, the footer, and in the related work sections. The disadvantage of this system is that you have to edit out one or the other for every project. 3) Same as 2 except use MasterFormat 2004 numbers that end in zero. To change from one system to the other, just drop the final zero, and suffer through the few materials that have changed Divisions. This option doesn't work for site and engineering sections. For a table of contents that shows this approach, email mkalin@kalinassociates.com and ask for the '1995/2004 table of contents.'

Global Workshops vs. Teleconferencing

You've probably noticed that team meetings are gravitating to two extremes. Many public owners now like Global Workshops, which are team meetings at the midpoint and end of each design phase. The entire team - perhaps as many as 30 people - spend 6 hours going through the project progress with each discipline presenting their work. The difficulty of this approach is that no one needs to be there all day, and if your fee didn't include four or five of these meetings, another level of stress is added. Be sure you understand your meeting requirements when you set your fees. Two other solutions which are gentler on your time, the call-in teleconference and the on-line live meeting: For the call-in teleconference, the architect sends an email to the team with the 800 number and password and a schedule indicating when each team member is to call in to join the teleconference in progress. Instead of spending 6 hours in a global workshop, you may only need to spend 20 minutes in the teleconference. If you want to call in at another time to listen, all are welcome to do so. The disadvantage of this approach is that graphics can't be shared. The solution is to use software like Microsoft Office Live Meeting where the presenter can put graphics and documents on the internet where all may view as they still call in by telephone to the discussion. www.livemeeting.com

View Drawings in Vista

Microsoft and Autodesk have announced that the first release of Vista includes a viewer for DWF files (the main Design Web Format many firms use). This allows Vista OS users to view DWF files without plug-ins or additional software downloads. Now specifiers, subcontractors, suppliers and others will be able to view documents more easily. Searching in Google for filetype:DWF brings up 206,000 files available in DWF format.

UniFormat II and PPDs

The CSI Project Resource Manual recommends a Preliminary Project Description (PPD) be prepared during the schematic design phase of a project, using UniFormat as an organizing tool. As you may know, UniFormat is used by many cost estimating firms as their database as it describes the building elements as entities rather than the materials breakdown typical for MasterFormat. From the UniFormat website: The ASTM E1557 - Standard Classification for Building Elements and Related Site work - UniFormat II provides a common structure linking the building program, specifications, and estimates. Its integration in the design process results in improved communications and coordination among all project participants, an accelerated design, and significantly increased productivity. The classification provides the Project Manager with an essential tool to control project scope, cost, time and quality.

Product Selection versus Specification Writing

One more time for the record: Fake specs result when product selections are not been made by the design team. When a project goes out to bid or for pricing, the design team has worked for months or years, while the contractor or estimator will only have weeks to understand and price the project. The specifier does their best to prepare comprehensive specifications, but what is the contractor to do when the brick is 'as selected by architect,' or the dock lift capacity is 'to be determined,' or when the metal finish is 'selected from manufacturer's full range of standard, custom, premium and metallic colors.' What's the best way to limit the damage? Take your best guess if need be: Brick at \$600 per thousand delivered and unloaded at the site, 6,000 pound capacity for the dock lift, 70 percent Kynar 500 PVDF in silver metallic color range. Even better, start with the manufacturer's specifications or ARCAT SpecWizard and make the major choices presented. The designer can still make other choices, but the cost and schedule impact will be based on what was specified versus what is required, and not a fake spec.

Project Requirement Impact Costs

Cost estimates for building projects must be based on more than products, quantity and quality. Include the following items in your Summary of Work section if they are applicable to your project to avoid confusion and potential extra costs: Requirements for Sequence of Work, Phasing, and Occupancy; Prior or Concurrent Work by Owner or Others; Existing Site Conditions and Restrictions; Contractor's Use of Premises and Adjacent Facilities; Preurchased and Preordered Items; Owner Furnished and Owner Installed Items; Owner Furnished and Contractor Installed Items; Special Mock Ups; Related Future Work; Reference Drawings and Reports; Owner's Building Standards; Anticipated Agreement Form.

Reviewing Owner's Contract Language

As specifiers, we are often asked to review the owner's general conditions documents. It's a fine line, as we are not attorneys and do not offer legal advice. However, common sense dictates that the specifier comment on items which impact the architect's ability to manage the project. Four examples from the owner's general conditions from a recent project.

Do not list the "instructions to bidders, bid forms, and bid bond" as part of the contract documents. These are pre-contract documents and I believe they are not applicable once a contract is signed. The CSI Manual of Practice suggests the same approach.

Do not mandate that specifications always take precedence over plans. Consider language such as "Technical Specifications and Plans shall be considered complimentary, and the Architect will make a determination as to priority if discrepancies, conflicts or omissions are discovered." It is a very bad idea to make the drawings or specs always govern over the other. The AIA A201 General Conditions follows this approach.

Do not backcharge the contractor for the architect's review fees unless you mean it. The contract stated that the Owner would backcharge the Contractor for the Architect/Engineer's hourly rate for review of submittals if the first submission is rejected. If this approach is established, the Contractor should know the rates they will be charged, and the architect's shop drawing stamp should clearly distinguish the action of 'revise and resubmit' from 'rejected.' It is normal for shop drawings for major items of the work to go back and forth several times before final acceptance.

Do not ask the architect to sign the "As-Built Drawing Review Log" weekly. If this approach is established, there will need to be enough architectural fee for a close enough examination of this type of critical document for 'approval.'

CATNIP Method for Product Selection

Overheard at the Building Science Forum a new acronym for product selection: CATNIP, the Cheapest Available Technology Not Involving Prosecution. Has it come to that?

Building Science

BETEC, a New Technical Resource

The Building Enclosure Technology and Environment Council (BETEC) is a council of the National Institute of Building Sciences (NIBS) and promoted by the American Institute of Architects. BETEC is intended to foster effective cooperation among public and private interests seeking energy efficient and environmentally responsible homes and buildings. Over a dozen new AIA/NIBS-BETEC chapters have organized around the country in the past two years, with architects, engineers, and those interested in building performance meeting monthly to discuss technical issues of the day (Boston, Philadelphia, Pittsburgh, Dallas, Seattle, Washington, Chicago, New York, St. Louis, San Francisco, Minneapolis and more). In Boston, the monthly meeting, attended by 25 people, begins with a business meeting and is followed by a speaker, pizza, and lots of networking. A membership application form is available at www.nibs.org, or you can contact your local AIA component for meeting times. (Most chapters do not require you to be a member to attend.)

Building Science Forum

Held in Syracuse NY in early September last year, experts from over 10 countries around the world discussed issues on research on building physics, and building science applications. Of note for specifiers was the breadth of the research based in laboratory and real-world applications and practical guidelines for specifying the building exterior, including a new Division 1 specification for Commissioning the Building Envelope developed by Kevin Knight of KTS Building Services Group and Mark Kalin of Kalin Associates. Presented papers are available at the National Institute of Building Sciences website, for the Building Enclosure Technology and Environment Council, www.nibs.org/betecactivities.html. At this website you may also subscribe for free to the new Journal of Building Enclosure Design.

Building Enclosure Conference

The push to green and sustainable design in our buildings is closely coupled with the science and technology of how people and buildings work. Organized by Building Enclosure Council National Research Coordinating Committee in collaboration with Heat Air and Moisture Research Coordinating Committee, The Building Enclosure Technology and Environment Council and the U.S. Department of Energy's Oak Ridge National Labs announce the first biennial international Conference on Building Enclosure Science and Technology, which will take place June 11–12, 2008, at the Minneapolis Convention Center. The conference will present two tracks: 1 - Bugs, Mold, and Rot IV: Do We Know What We Don't Know about Fungal Growth, Corrosion, and Decay in Building Materials? and 2 - Energy Efficiency in Buildings: Where Are We and Where Should We Be Going? For more information or to submit an abstract, contact Pat Cichowski of the Building Enclosure Technology and Environment Council (BETEC) National Institute of Building Sciences 1090 Vermont Avenue NW Washington, DC 20005-4905 202-289-7800

US DOE Funds Air Barrier Research Testing Facility

The US air barrier industry is one with potential for exponential growth and the ASHRAE Standard 189P listed above includes the requirement for an air barrier in an exterior wall assembly. However the industry needs to ensure that materials and installation practices will produce an air barrier system that will perform as intended. ABAA announced this month that a 3-year joint research project involving the US Department of Energy, Oak Ridge National Laboratories, and the Air Barrier Association of America is being undertaken. Multiple wall types will be constructed to not only demonstrate the effectiveness of air barriers buildings, but will serve as a technical backup of air barrier performance. It will also provide the technical data required by DOE in order to fully support the inclusion of air barriers in building codes.

NSF Grant Guidelines Updated

Looking for grant money from an agency with \$5.9 billion to give? The NSF Proposal and Awards Policies and Procedures Guide has been updated effective June 1, 2007. For your copy search on-line for Document NSF 07-140. The National Science Foundation (NSF) is an independent federal agency that supports fundamental research and education across all fields of science and engineering, with an annual budget of \$5.91 billion. NSF funds reach all 50 states through grants to nearly more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. Each year, NSF receives about 40,000 competitive requests for funding, and makes nearly 10,000 new funding awards. The NSF also awards over \$400 million in professional and service contracts yearly. More info at www.nsf.gov.

ASHRAE and USGBC Developing Green Building Standards

ASHRAE, the 50,000 member organization of engineering professionals and the US Green Building Council have proposed a new standard 189P that will provide minimum guidelines for green building practices. Although USGBC and ASHRAE seem unlikely partners, the key advantage to improving building performance is that ASHRAE standards are frequently incorporated in building codes, and compliance will be mandatory in those areas. The standard is nearly complete and has been released for public review and comment. Comments will be accepted through July 9, 2007 at www.ashrae.org/publicreviews. As background, the standard is being developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) in conjunction with the Illuminating Engineering Society of North America (IESNA) and the U.S. Green Building Council (USGBC) and will be the first of its kind in the United States. Standard 189P (Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings) will provide a baseline for sustainable design, construction, and operations in order to drive green building into mainstream building practices. It will apply to new commercial buildings and major renovation projects, and will address key areas of performance including energy efficiency, greenhouse gas emissions, sustainable site selection, water usage, materials and resources, and indoor environmental quality.

ASHRAE Updates Residential IAQ Standard

The 2007 version of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) residential indoor air quality standard is now available. ANSI/ASHRAE Standard 62.2-2007, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, is the only nationally recognized indoor air quality standard developed solely for residences. It defines the roles of and a minimum requirement for mechanical and natural ventilation systems and the building envelope intended to provide acceptable indoor air quality in low-rise residential buildings and is written in enforceable mandatory (code) language. Changes to the standard from the 2004 version include application of exceptions based on climate map zones vs. degree-day based, making it easier to apply the standard; inclusion of a new technology of condensing dryers that do not have an exhaust flow like traditional dryers; and a change in requirements for testing and rating ventilation fans. The cost of Standard 62.2-2007 is \$39 (\$32, ASHRAE members) or visit the ASHRAE Bookstore at <http://www.ashrae.org/publications/page/1279>.

Building Envelope Design Guide Expanded

The National Institute of Building Sciences (NIBS) under guidance from the Federal Envelope Advisory Committee has expanded their comprehensive guide for exterior envelope design and construction for institutional / office buildings. The Envelope Design Guide (EDG) is continually updated through the Building Enclosure Councils (BECs). See the chapters on the web link listed below for design guidance on below grade systems, wall systems, fenestration systems, roofing systems and atria systems, at <http://www.wbdg.org/design/envelope.php>

R-7.1 Equals R19 for Insulation

Continuous Insulation Outboard of Metal Studs Provides More Equivalent R-Value; R7.1 equals R19. Excerpted from ASHRAE/IES 90.1-1989 - Energy Efficient Design Of New Buildings Except Low-Rise Residential Buildings, American Society Of Heating, Refrigerating And Air-Conditioning Engineers, Inc. ASHRAE uses a correction factor for the insulating value of insulation located in the cavity of steel studs when compared to continuous insulation outboard of the metal studs. For example, a 1.4 inch thick layer of continuous extruded polystyrene insulation outboard of metal studs provides the equivalent insulation of 5.5 inches of insulation in the stud cavity because of the thermal bridging of the metal studs. From ASHRAE 90.1 Table 402.1.2.1B: Parallel Path Correction Factors-Metal Framed Walls with Studs 16 GA or Lighter. The following list shows the size of member and spacing, then the R-value in the stud, the correction factor, then the equivalent R-value of insulation outboard of the stud:

2 X 4 at 16 O. C.; R-11 0.50 R-5.0; R-13 0.46 R-6.0; R-15 0.43 R-6.4
 2 X 4 at 24 O. C.; R-11 0.60 R-6.6; R-13 0.55 R-7.2; R-15 0.52 R-7.8
 2 X 6 at 16 O. C.; R-19 0.37 R-7.1; R-21 0.35 R-7.4
 2 X 6 at 24 O. C.; R-19 0.45 R-8.6; R-21 0.43 R-9.0
 2 X 8 at 16 O. C.; R-25 0.31 R-7.8
 2 X 8 at 24 O. C.; R-25 0.38 R-9.6

Links You'll Like

www.wbdg.org (national whole building design guide)
www.etsy.com (buying and selling all things handmade)
www.justcurio.us (answer a question, ask a question, just for fun)

Specs and the Law

Courts and the Interpretation of Specs

Gerald Katz of Katz & Stone LLP in Vienna, VA continues to hone his terrific presentation skills. The two reasons specification fail: First, if the spec is technically defective. Second, if they are ambiguous and ultimately found to be legally unenforceable. Do you know the legal principles affecting specs (summarized by Mark (not a lawyer) Kalin): The Spearin Doctrine - 1918: The owner's specs (and those prepared by the architect for the owner) impliedly warrant that if the contractor followed the specs, the resultant product will not be defective or unsafe; and if the resultant products proves defective or unsafe, the contractor will not be liable for the consequences. Note: The Spearin Doctrine does not apply to performance specs. Robins Maintenance Inc vs. US - 2001: If the bidder was aware of a defect while they were bidding, they can't make a claim later based on the defect - i.e. they have a responsibility to submit a proper bid. Brunswick Construction vs. Nowland UK - 1974: If a defect is within the normal knowledge of a contractor, they have an obligation to identify the defect. And then there are the six rules of interpretation of documents, applicable to specs and all documents:

1. The Whole Agreement: Consider the whole, not just a part.
2. Specific Controls General: Specific provisions take priority over those which speak only in general terms.
3. Trade Custom, Practice and Usage: Conflicts or ambiguities can be resolved by info not in the documents.
4. Practical Interpretation: The more practical interpretation is the more likely.
5. Construction Against the Drafter: Ambiguities are frequently interpreted against the preparer of the agreement.
6. The Written Portion Controls over the Printed Portion: In the event of conflicts between hand-written or typed insertions on a contract form and the preprinted form, the hand-written or typed provisions govern.

Mr. Katz's Conclusion: Get it right the first time - avoid ambiguities, contradictions and conflicts. "Drafters (of documents) should be familiar with and take into account the rules that courts will employ to interpret any defects or ambiguities in their specifications, in order to produce contract language that is more likely to hold up in litigation."

Division 01 - General Requirements

The original intention of CSI MasterFormat Division 01 "would create a convenient place for instructions to the Contractor that could not logically be placed anywhere else." A location for "common denominators" which apply to all other sections. I suppose we all have memorized the first sentence of Par. 3.12.7 of AIA A201-1997: "The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect." i.e. STOP with the fuzzy language on the shop drawing stamps about accepting or reviewing or taking no exception - its all moot. And remember, submittals are not contract documents, are not used to make changes in scope of project or intent of contract documents, and not used to request or imply substitutions or to otherwise make changes in project requirements. Need a good substitution request form? Use the forms on the CD with the CSI Project Resource Manual.

Proprietary Products for Public Projects

Manufacturers and designers frequently push for proprietary specifications. Working with the private owner and designer, products are frequently specified on a proprietary, no-equal basis. However for public construction projects it is problematic to avoid the issue of 3-equals. An excellent review of the issues was published by the Office of the Inspector General of the Commonwealth of Massachusetts. Although the report was published a few years ago (2003) it highlights the applicable laws, the value of competitive specifications, several Massachusetts Appeals Court Interpretations of the Law, and even recommended language for a non-collusion form in the designer's contract. The message to specifiers is not to prepare fake specs or proprietary specifications that eliminate competition without stating the intent. All states have a process whereby an agency can approve the selection of a proprietary product.

An example from the report: "The municipality specified that the school building roof had to be a certain color that was available from only one manufacturer. The municipality was not able to produce written justifications for this technical requirement. By including technical requirements that only one manufacturer could meet, the specifications effectively eliminated competition; without written justification, the proprietary specifications were unlawful."

Editor's Note: ARCAT specifications are always proprietary and list the real options available from the manufacturer for each product. This eliminates fake specs and makes it clear what choices the specifier has made. A potential competitor would need to meet the specified requirements. In our experience, most manufacturers don't mind apples-to-apples competition - its the concealed proprietary specs that are the problem. For a copy of the full 9-page in PDF format, email mkalin@kalinassociates.com and ask for the 'proprietary spec report.' If you have similar documents, please send them along to us.

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!

Free Advice on Disclaimers on FTP Sites

An architect told us that their revisions to our specifications were on their website in their FTP area, and asked us to download them from that location rather than by email. The problem was the disclaimer to access their site said the following: These computer files are provided to you with the understanding that you agree to accept these files, posted in the indicated FTP site, without any warranties, guaranties and/or other representations of any nature concerning the accuracy and/or completeness of any information described and/or depicted therein. Our Firm will be held harmless with respect to any claims, costs and/or liabilities arising out of or relating to the accuracy and/or completeness of any such information. These terms are binding upon any third parties to whom these electronic files are distributed, and their names shall be provided to Our Firm upon distribution. Use of this FTP site constitutes agreements with the terms given above. Click here to access the site: I agree to the above terms. The terms on the FTP site were very different terms than the terms of our contract for services, and we had two options to respond. The first was to ask, under the terms of their disclaimer, that the architect only send us changes that were accurate and complete so we could do our work, and we would wait until they did - and then they would never hire us again. The second and more practical approach was to send them the changes with a note in the email stating that we were providing work under the terms of our original agreement which were not modified by the disclaimer on their FTP site.

Schedule of Building Elements

If you're anticipating collaborating with a British architect, expect minor difficulties with language but more significant problems with their Schedules of Building Elements. The schedules are a combination of partition type descriptions and wall assemblies, often in great detail including trade names of manufacturers and drawing references. While helpful and wonderfully thorough, recent experience suggests they pose a problem to their U.S. architectural team and U.S. subcontractors as many of the Building Elements are a combination of the work of many trades. The solution of let-the-spec writer-sort-it-out adds more confusion, as then the British architects have trouble verifying each material landed in the right specification. On three recent projects, the Schedule of Building Elements was retained in two, and used only for reference in the third. And the English language? Aluminium is aluminum, timber is wood, ironmongery is hardware, render is plaster, mild steel is all steel except structural, skirting is wall base, and a welted roof is a standing seam roof.

British Common Arrangement of Sections

Specs are organized differently around the globe. Writing specs for projects in England? Use their Common Arrangement of Work Sections (CAWS) to define an efficient and generally acceptable arrangement for specifications and bills of quantities for building projects. The system consists of a set of detailed work section definitions, all within a classification framework of Groups and Sub-groups. The CAWS classification organized specs down to the level of work section titles forms one of the fifteen tables of the Uniclass classification scheme. From the system description: The detailed work section definitions form the largest and most important part of the document. Different titles often mean different things in different industry documents and to different groups of people. The detailed definitions are provided in order to reduce needless variations and conflicts between documents and even within the same document. In practice this means concentrating on the boundaries to ensure that gaps and overlaps between sections are eliminated. CAWS includes about 360 work sections. They are derived from close observation of current practice, following the pattern of sub-contracting in the industry. The primary factors which influence and define these work groupings are the responsibility for design and performance and methods of working, related to sub-contract practice. Available from the RIBA Bookstore at www.ribabookshops.com for 35 pounds plus shipping.

Acronym Finder

Ever get lost in the array of acronyms in specifications? ASTM, ANSI, AWI, NOFMA, WWDA, UL, FM, and on and on. Try www.acronymfinder.com and www.ncarb.org/Forms/acronyms.PDF

Industry Updates

Updated Tile Standards

Many specifiers have a copy of the TCA Handbook for Ceramic Tile Installation handy. If you're using an older edition, time to get the 2008 new copy from the Tile Council of North America (yes - they changed their name) at www.tileusa.com for \$9., or even their new 2008 CD-ROM version with hyperlinks to ANSI A108/A118/A136.1 standards for \$15. However the hyperlinks are to the 1999 ANSI standards, and not the current 2005 standards (what were they thinking?). The CD-ROM has CAD files for the installation diagrams we've become familiar with but as specifiers we haven't seen any architects use them yet.

New Marble Website

The Marble Institute of America has updated their website for stone info, www.marble-institute.com. Lots of technical bulletins, videos, even a locator directory for residential stone fabricators/installers and commercial contractors/installers. Discounted prepublication orders are being accepted for their Dimension Stone Design Manual Version VII.

MBMA Manual Updated

The Metal Building Manufacturers Association has just issued a new edition of their Metal Building Systems Manual. Updates include revisions to the International Building Code for 2006, and is a great resource if you work with metal buildings. The manual is more than 600 pages long and includes a fully interactive and searchable CD with metal roof details in AutoCAD format. The price is \$249. More info at www.mbma.com

New AAMA Coating Standards

Performance standards for coatings on fiber-reinforced building components such as windows, doors and skylights have been in development for many years and have now been balloted successfully through the AAMA standards process. Three new standards have been developed by the American Architectural Manufacturers Association (AAMA): AAMA 623, Voluntary Specification, Performance Requirements and Test Procedures for Organic Coatings on Fiber Reinforced Thermoset Profiles; AAMA 624, Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Fiber Reinforced Thermoset Profiles; AAMA 625, Voluntary Specification, Performance Requirements and Test Procedures for Superior Performance Organic Coatings on Fiber Reinforced Thermoset Profiles. AAMA 623-07 applies to basic coatings, AAMA 624 to higher performing coatings, and AAMA 625-07 to the highest performing coatings. For more information www.aamanet.org

Key-To-Metals Database

If research into the use and availability of metals is important to your designs, the Key-to-Metal comprehensive database for steel and non-ferrous metals may be of use. The Key to Metals Group is focused on collecting steel standards from all over the world, analyzing and combining international steel standards, cross-references and material properties, providing free technical support in questions related to metal properties, collecting, analyzing and processing all other relevant materials such as manufacturing specifications and specialized literature. Support is available in English, Chinese, Spanish, German, French, Italian, Arabic and Japanese. Check out www.key-to-metals.com.

Free Firestopping Manual of Practice

The Firestop Contractors International Association (FCIA) is offering a free copy of their Manual of Practice for free to architects, specifiers, fire marshals and building officials (other pay \$895.) while supplies last. FCIA also publishes Life Safety Digest, and free subscriptions can also be requested through Bill McHugh at the email address following. To get your free copy of the FCIA Manual of Practice and to request a subscription to Life Safety Digest, email FCIA through billmchugh-jr@worldnet.att.net If you're looking for their generic firestopping specs in either Word, PDF or rtf format, go to <http://fcia.org/articles/spec07840.htm>

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.www.carecarpet.org

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.

Sealant Report Update

ASTM has just published STP 1488 - Durability of Building and Construction Sealants and Adhesives, 2nd Edition. The document includes twelve peer-reviewed papers which cover the latest information, gained from laboratory research and field work, on sealant and adhesive durability and the development of new products and test methods. Topics cover: Factors Influencing the Durability of Sealed Joints and Adhesive Fixations; Durability Studies of Sealants and Adhesives; and Development of New Test Methods and Performance Based Specifications.. For specifications, standards development proposals include a practical method to evaluate the fatigue properties of structural silicone glazing adhesives; a novel testing method to study weatherability of construction sealants; the use of optical imaging and an image analysis system to assess surface changes induced in sealants by outdoor weathering and more. The document is available for \$55 from ASTM.org.

AAMA Standard for Self Adhering Flashing Updated

Just released is AAMA 711-07, a voluntary specification covering self adhering flashing, released by the American Architectural Manufacturers Association (AAMA). According to John Lewis, AAMA technical director, the revamped 22-page document, first published in 2005 and titled Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products, includes several updates. This specification establishes the test methods and minimum performance requirements for self adhering flashing products that are used around the perimeter of exterior fenestration products. It also provides a method to determine the minimum width of the flashing products and to evaluate the influence of the environmental factors on the installation of self adhering flashing products applied under typical field conditions, per Lewis. The Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products is available through download, CD or paper copy at a cost of \$16.00 for non-members and \$8.00 for members, or from the AAMA Bookstore <http://www.aamanet.org/general.asp?id=45>

Free Help with Steel Questions

Five experts on steel answer the free tech hotline at the American Institute of Steel Construction. If you have any questions on steel, including product selection, detailing, fabricating and marketing, call 866-ask-aisc or email solutions@asc.org

WIC is WI

Formerly known as the Woodwork Institute of California (WIC), the renamed Woodwork Institute (WI) serves Oregon, California, Nevada, and Arizona. The Woodwork Institute's mission is to provide standards and quality control programs for the architectural millwork industry through their Manual of Millwork, Certified Compliance, and Monitored Compliance Programs, and to promote quality craftsmanship and design through an Awards programs. www.wicnet.org

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.

FM Requires Firestops in Cavity Walls

"For exterior cavity wall construction, fire stops must be continuous from the inner face of the masonry veneer to the outer face of the interior gypsum board or CMU." If your project will be insured by a company requiring compliance with FM recommendations, note the following requirement for firestopping in exterior cavity walls. "If the building will utilize cavity wall construction, it is preferable that noncombustible insulation is used. Other acceptable types would include FM Approved insulation for the application to be used or FM Approved metal sandwich panels. If insulation is exposed such as within a cavity wall, then design and install horizontal or vertical fire stops arranged to limit the insulation areas to approximately 2000 sq. ft. Other construction features such as windows or wall breaks would also be considered to limit fire spread. Fire stop materials such as foam glass, solid web wall studs, etc., can be used however they should be submitted to FM Global for review with specific notations referencing their purpose. Fire stops must be continuous from the inner face of the masonry veneer to the outer face of the interior gypsum board or CMU."

FM and Green Roofs

If you're planning a green roof assembly on an upcoming project, confirm whether the project will be insured by a company that requires compliance with Factory Mutual (FM) requirements. FM Global Data publishes Data Sheet 1-35 for Green Roof Systems (2007) with requirements that will affect your drawings and specifications, including vegetation-free zones at roof perimeter, flood tests, and structural calculations which are to be sent to FM. To purchase a copy of the data sheet, go to <http://www.fmglobalcatalog.com>. Note a few of their recommendations following: For single ply membranes where heat welded seams are not possible and are adhered or taped, then the protection/root barrier system should have heat welded seams. // For green roof ground cover, provisions should be made (such as roof top hose bibs) to allow for occasional watering. Avoid using mosses and grasses, which can dry out and create a fire risk. // Prior to the installation of the drainage panel, growth media and vegetation, the Contractor should conduct a leakage test involving flooding the roof with 1 to 2 inches of standing water for a period of at least 24 hours with drains and scuppers blocked. Once the standing water is drained, the owner's representative should witness the inspection for leaks, lap and seam integrity and inadequate slope to drains. // Provide stone ballast or concrete pavers at a vegetation free zone along the roof perimeter (10 percent of least horizontal plan dimension or 40 percent of the mean building height, whichever is smaller; but not less than either 4 percent of the least horizontal plan dimension or three feet). // Provide stone ballast or concrete pavers at 2'-0" wide vegetation free zones surrounding all roof drains, pipe penetrations, penthouses, machine rooms, mechanical units and parapet walls. Ensure that the roofing system can adequately resist wind uplift forces. If the roof system relies on growth media to provide ballast, ensure that the growth media is properly protected against wind erosion. If vegetative mats are to be used, ensure that they are properly anchored to resist wind uplift until it is determined that the root system has adequately engaged the underlying growth media. Ensure that the structure has been properly designed to support the substantial dead loads of the green roofing system, along with the code and FM Global required live loads and environmental loads. Ensure that ponding analysis accounts for creep deflection as necessary. Accurate evaluation of the system dead load should account for a saturated state. A die off rate of 20 percent to 50 percent can be expected during the first two year period and the specifications should cover the cost of replanting. If the roof will slope more than 10 degrees or more, slope stabilization measures should be taken. All structural engineering calculations and drawings should be forwarded to FM Global for review to demonstrate support for the above recommendations.

Free Software for FM Roof Assemblies

If your project is insured by a company which requires Factory Mutual approvals for roofing, a free software is available to help with your design. RoofNav is a free software application that is accessible via the Internet. The RoofNav application allows designers to access to the roof-specific portions of the FM Approvals' Approval Guide through a series of tools and comprehensive search capabilities. Also available is online access to the FM Global Property Loss Prevention Data Sheets. With RoofNav, roofing professionals can search a massive database to create a contractor package that meets both FM Approval requirements and customer specifications. RoofNav effectively simplifies the process of configuring and installing roofing assemblies that meet the requirements of FM Approvals. More info and Data Sheet 1-35 free at <http://www.roofnav.com>

AIA IPD

On November 11, the Integrated Project Delivery Guide (jointly developed by AIA's Contract Documents Committee and the AIA California Council) became available as a tool to assist owners, designers and builders to move toward integrated models and improved design, construction and operations processes. The goal of the Guide is to identify the characteristics of IPD and to provide specific information and guidance on how to utilize IPD methods to achieve enhanced design, construction and operations processes. The Guide begins with introductory material about the principles of IPD and points of consideration in a generic sense, moves through a study of implementation of IPD and culminates with discussion of application of general IPD principles within the specific framework of common delivery models used in the marketplace today. To download the IPD Guide in PDF format, go to <http://www.aia.org/ipdg>. You will need to register your email address to obtain the guide.

The National CAD Standard

Yes, there is a national CAD standard, used by over 4,000 organizations, which has more to do with the location of information on drawings, sheet layout, title blocks and sheet identification than actual CAD standards. However standardizing CAD layer names and plotting guidelines has saved countless hours for the firms using the standard. Version 3.1 (2005) is the current version, with Version 4.0 due in late 2007. How many millions of times have spec writers wished all drawings use standard terms, standard abbreviations, standard symbols? More info at nationalcadstandard.org.

Green Ramblings

Green Steel

According to a report from the American Iron and Steel Institute, the US steel industry has already surpassed the Kyoto Protocol's call for an average 7 percent reduction in greenhouse gas emissions between 1990 and 2012 by achieving a 28 percent reduction since 1990 - surpassing the Kyoto target by 240 percent!

Metal Recycling by Percentage Questioned

The International Council on Mining and Metals (ICMM) has issued a declaration on recycling principles aimed at encouraging product policy-makers, designers and manufacturers to adopt life cycle thinking when developing metals recycling policies. Interestingly, their position is that specifying a minimum or target level of recycled material content in a product ignores the environmental costs and benefits associated with achieving this goal. Indeed attainment of the goal may lead to an increase in economic and environmental costs when metal available for recycling is diverted to the manufacture of a particular product away from one where the recycling loop is more economical or environmentally efficient. The Declaration is a consequence of metal producing companies extending their interest beyond the plant gate to a consideration of the whole life cycle of their materials. This focus on materials stewardship is in the interests of environmental and economic efficiency, achieving regulatory compliance and enhancing reputation through responsible behavior. Their Declaration and more info at www.icmm.com

Recycling Database

Check out a new national waste database at www.wbdg.org/tools/cwm.php. The Construction Waste Management Database contains information on companies that haul, collect and process recyclable debris from construction projects. Created in 2002 by GSA's Environmental Strategies and Safety Division to promote responsible waste disposal, the new Database is a free online service for those seeking companies that recycle construction debris in their area. Use the form to search the Database by state, zip code or materials recycled.

Gypsum Recycling Expanded

Gypsum Recycling International is the first company to have implemented a complete and commercially viable voluntary system for recycling all kinds of gypsum and plasterboard waste. They turn the waste into a gypsum powder which the plasterboard plants can use as raw material to make new plasterboards with. The system with its patented technology is now implemented in 7 countries. In the US, gypsum recycling has started in the Boston area, and the company also is accepting used ceiling panels as part of the USG Ceiling Panel Recycling Program. More info at www.gypsumrecycling.biz

Federal Green Guide for Specifiers

The US EPA has partnered with the Federal Environmental Executive and the Whole Building Design Guide (www.wbdg.org) to provide model green construction specification language to be used to supplement full project specs and to green guide specifications. The stated purpose of the specs are to help federal agencies meet their project-specific environmental goals and mandates including the : Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding; EPA's Final Guidance on Environmentally Preferable Purchasing; Greening of Government Executive Orders; EPA's Comprehensive Procurement Guidelines for recovered content; USDA's Biobased Purchasing Program; ENERGY STAR & DOE Federal Energy Management Program (FEMP) Product Efficiency Recommendations; Energy Policy Act of 2005; ASTM, LEED, Green Globes, and other rating systems and standards; And other 'best practices' as determined via industry and public comment. While some of the language seems philosophical from a strict specifier's view, its a great tool and worth a look, especially for Division 1 sections. One caveat is to be careful with the submittals you ask the contractor for in your specs - better to specify green products and get what you want rather than ask the contractor to report the environmental characteristics of products for no purpose. Files are available in Word or PDF format, you can download them all at once if you prefer. Current contents include nearly 70 sections at fedgreenspecs.wbdg.org.

Green Building Costs

The Second Edition of Green Building: Project Planning and Cost Estimating has been published by RS Means and includes green cost data on a CD including complete building assemblies. For specifiers, topics of interest include Chapter 7 - Rating Systems and Standards, Chapter 8 - Budgeting and Financing, Chapter 9 - Specifying Green Products and Materials by Mark Kalin and Chapter 10 - Commissioning the Green Building. The book helps to defuse the issues that green buildings cost more by including real data on the costs of high-efficiency HVAC and lighting, renewable energy systems, gray water systems, green roofs, green products and more.

CSI GreenFormat Update

The Construction Specifications Institute's website for GreenFormat claims to be the very first online reference source of its kind, offering the building industry an easily accessible database of green building product and manufacturers. The developers have indicated that several months of programming work are necessary before beta testing can begin, and manufacturer's will be invited to add their information to the website prior to general release. CSI will need to move fast on this one, as there are already many websites available. For more info go to www.greenformat.com

Global Warming and Changing Coastlines

Architects and engineers are already being asked how to solve the problem of building in coastal areas, where water levels are predicted to rise from 3 inches to 3 feet in the next century. Flood gates are common in many cities and in individual homes, but new approaches include homes built on hollow foundations which buoyantly float up on down on pilings. The Dutch have successfully fought off the floods of the North Sea for centuries, with few floods in recent years and are planning a Hydropole, a city that can live on the floating waters. The Netherlands has also been working with US governmental agencies to assist in developing levees that can withstand certain intensities of tropical storms around New Orleans. Your thoughts? mkalin@kalinssociates.com

Ozone Layer Recovering

A new report issued by the EPA on April 26, 2007 concludes that after nearly 20 years of international treaty protection, the six-mile-high ozone layer that shields the earth from harmful solar rays is on the road to recovery but challenges remain. The report recognizes the substantial and successful investments of the many collaborators who have worked towards protecting and restoring the ozone layer. The report states that the ozone layer has not grown thinner over most of the world since 1998, and the Antarctic ozone level is projected to return to pre-1980 levels between 2060 and 2075. Looking ahead to 2165, actions to protect and restore the ozone layer are projected to save 6.3 million U.S. lives that would otherwise have been lost to skin cancer. This September 2007 will mark the 20th anniversary of the landmark Protocol to protect the ozone layer. The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted in 1987 and has been ratified by 191 countries. To obtain a copy of The "Achievements in Stratospheric Ozone Protection" report: epa.gov/ozone/2007stratozoneprogressreport.html

Federal Green Construction Guide Specifications

Need a spec on Noise and Acoustics Management, Indoor Air Quality, or Biomass Energy Electrical Power Generation Equipment? Over 75 specification sections useful for federal green construction are available at the Whole Building Design Guide website of the National Institute of Building Sciences. Intended to help federal agencies meet their environmental goals and mandates, the generic specifications are useful for a wide variety of projects. Download in Word or PDF format at www.wbdg.org/design/greenspec.php.

Free Green Product Advice Software

Just available May 2007 from NIST: Architects and contractors interested both in conservation and thrift can benefit from the latest updates to an innovative software package released this week by the National Institute of Standards and Technology (NIST). BEES 4.0, the new version of NIST's software tool for selecting environmentally preferred, cost-effective building products, updates data on more than 200 products and adds 30 new products for review. It also offers users the option of a new set of consensus weights for scoring the environmental impact of individual building products. BEES 4.0 (Building for Environmental and Economic Sustainability version 4) measures both the environmental and economic performance of building products with life-cycle assessment techniques developed respectively by the International Organization of Standardization (ISO) and ASTM International. With BEES a user can ascertain, for instance, the environmental impact of a product at any stage of its existence—raw material acquisition, manufacture, transportation, installation, use, and recycling and waste management. The environmental ramifications of the product at each of these stages is provided for each of 12 categories: global warming, acidification, eutrophication, fossil fuel depletion, indoor air quality, habitat alteration, human health, ecological toxicity, ozone depletion, smog, criteria air pollutants and water intake. The new consensus weight option, developed by a panel of building product manufacturers, green building designers and environmental assessment experts, allows users to evaluate environmental impacts considering short-, medium- and long-term effects. Comprehensive economic performance data are similarly available for the costs of initial investment, replacement, operation, maintenance and repair, and disposal. Environmental and economic performances are combined into an overall performance measure using the ASTM standard for Multi-Attribute Decision Analysis. For the entire BEES analysis, building products are defined and classified according to the ASTM standard classification for building elements known as UNIFORMAT II. BEES 4.0 includes a number of new non-biobased products, including carpeting from several manufacturers who agree to purchase carbon credits to offset the product's life-cycle greenhouse gas emissions. These and other products, such as biobased carpets, roof coatings, building maintenance products and fertilizers that qualify for a government

“green” preferential purchase program, could increase builder participation in the nation’s green building drive. The U.S. Department of Agriculture Chief Economist’s Office of Energy Policy and New Uses supported NIST’s BEES research on biobased products. For more information on BEES 4.0, which can be downloaded for free, visit www.bfrl.nist.gov/oe/software/bees.html. BEES 4.0 runs on Windows 95, and beyond personal computers with at least 60 MB of available disk space. A printer must be installed. Download your free copy of BEES at the address above. If you prefer a free BEES 4.0 compact disc and printed manual, place your order through the EPA Pollution Prevention Information Clearinghouse by calling (202) 566-0799 or e-mailing ppic@epa.gov. Note that most of the products listed in the software are generic types, such as generic fly ash, generic plywood sheathing, generic stucco, generic aluminum siding, although some specific products from manufacturers are included.

\$1M for Green Building Research

The US Green Building Council continues to grow rapidly, with over 10,000 members firms and over 1,000 projects certified. This month the USGBC announced a \$1 million commitment to support green building research. USGBC says the funds will be targeted at increasing research in areas such as energy and water security; global climate change prevention; indoor environmental quality; and passive survivability in the face of natural and man-made disasters. USGBC’s commitment comes on the heels of its recently published Green Building Research Funding: An Assessment of Current Activity in the United States, which found that research related to high-performance green building practices and technologies is woefully underfunded by all sectors. Using this work as its basis, the USGBC Research Committee will publish a national green building research agenda this fall that identifies key research areas for advancing building performance and market transformation. View the Green Building Research Funding Study at the link at <http://www.usgbc.org/News/PressReleaseDetails.aspx?ID=3206>

VOC Levels Not a Measure of Safety

As specifiers, we’ve been quick to adopt the notion that lower VOC (volatile organic compound) levels mean safer products. Unfortunately, that is not the case. As pointed out in the current issue of Environmental Building News, the EPA only requires limits on VOC levels if the compound also contributes to smog (ground level ozone). Slipping through the cracks are poisonous odorous compounds such as formaldehyde and methyl chloride. At the AIA Convention one manufacturer of sealant said his low-VOC product was the most toxic he offers, because the carrier is perchloroethane, a hazardous solvent that is not considered a VOC by EPA.

Lower VOC Levels May Do More Harm Than Good

Coating companies are concerned that excessive VOC restrictions might have unintended consequences. When the South Coast Air Quality Management District (SCAQMD) in California reduced the permissible VOC emissions of industrial maintenance coatings from 250 grams per liter (g/l) to 100 g/l, buyers in the region had to sacrifice performance. The limit is important as the USGBC LEED program includes the requirements of SCAQMD. According to one manufacturer, solvent-based urethane VOC emissions have been brought down to 250 g/l while maintaining performance, but current technology can’t get the levels below 100 g/l at the same level of performance. Latex VOC levels are less than 100 g/l, but urethane and epoxy coatings can last more than 10 times as long as latex coatings. “Companies in SCAQMD might resort to buying low-VOC latex coatings from the local paint store, but will have to repaint annually. This will release emissions every year and increase their surface preparation and maintenance costs – labor makes up 80 percent of the cost of painting. Additionally, latex coatings are more likely to deteriorate before repainting, which can result in corrosion. This means more steel will have to be manufactured and more steel and structural foundations will have to be replaced, producing a greater burden on the environment. Until technology allows for high-performance properties in low-VOC formulations, any standards below 250 g/l may, in the long run, do more harm than good.”

Federally Funded Green Research

Research on green building presently constitutes an estimated 0.2 percent of all Federally funded research, an average of \$193 million per year, primary coming from the DOE and EPA. This is roughly equivalent to only 0.02 percent of the estimated value of annual U.S. building construction, despite the fact that the construction industry represents 9 percent of the U.S. GDP. At the same time, the construction industry reinvests only 0.6 percent of sales back into research, significantly less than the average for other U.S. industries, and significantly less than private sector construction research investments in other countries. If you are aware of research which compares equivalent products, please email this author at mkalin@kalinassociates.com.

LEED Update

Fastest LEED Certification

In a hurry to have one of your firm's LEED projects certified? Typical buildings take several years, however several projects seeking USGBC LEED-CI (Commercial Interiors) certification have achieved certification in well under a year. The fast pace of design and build-out makes it possible.

AIA B214 Requires Green Specs

If you are a specification consultant, better check whether AIA B214 is used by your client when taking on a LEED project. AIA B214 Standard Form of Architect's Services – LEED Certification, 2004 is being used by many firms, and Paragraph 3.4 requires an architect to provide specifications that incorporate LEED requirements for including in to the contract documents, and defines the contractor's responsibilities as they pertain to LEED certification. The owner may require a surety bond from the contractor to ensure performance, and 15 states have legislation that governs energy performance-based contracts. However, if the building energy performance or LEED certification is jeopardized, and if your contract with the architect requires compliance with their contract with the owner, your specs will certainly be involved. Then there's the Spearin Doctrine that says performance based specs get you more off the legal hook than proprietary specs which imply they are suitable for the purpose. So which direction to travel? This is not legal advice as I am not an attorney – but ask yours if AIA B214 is used on your project.

GBCI Created to Manage USGBC LEED Certification

In January 2008, USGBC will transfer responsibility for the ongoing administration of the LEED Professional Accreditation program to a newly incorporated entity, the Green Building Certification Institute (GBCI). GBCI will manage all aspects of the LEED AP program including exam development, registration, and delivery. GBCI will also oversee the development of the maintenance program for LEED AP credential holders. USGBC will continue to manage the development of the LEED Green Building Rating System and to provide related resources and educational offerings. LEED Accredited Professionals will not have to do anything and their credential will not be affected by this change. The GBCI Web site is the place to learn about LEED Professional Accreditation, register for the LEED AP Exam, find LEED Accredited Professionals in your area, access your LEED AP exam records, and manage your LEED AP Directory listing, see www.gbci.org

LEED Tips

Always include the USGBC LEED scorecard in the spec for the contractor, and always indicate 'yes' or 'no' in the credit column. The contractor needs to know which points you are counting on, and 'maybe' always turns into 'no' in our experience. Update the scorecard and reissue it to the contractor periodically.

The regional material credit and recycled content credit are only for products in specifications in CSI Divisions 2 through 10. Elevators, entrance mats, and mechanical equipment don't count. The best way to ensure you'll get those credits is to take a preliminary pass at the excel spreadsheet that USGBC provides. For example, if you are seeking the recycled content point, and fly ash in your concrete and recycled steel in your framing and studs get you to the threshold, no other documentation for that credit is required. We've seen designers who think that recycled content is required for every product by LEED - which is not correct.

If your project has a slurry wall, USGBC considers the spoils a product which must be accounted for by the construction waste management credits. Don't forget it in your calculations.

There are four innovation credits available, but you can submit for up to six innovation credits hoping to get four. There is no real need to guess, as you can look at the Credit Interpretation Reports (CIR) on the USGBC website to determine which innovation credits have been accepted for other projects.

Check out Section 01350 - LEED Submittals in the ARCAT Outline Specifications. It takes the approach that the best way to achieve LEED credits in the specs is to list the sections which impact each credit you want to achieve. For example, if you want to receive the Materials and Resources Credits 4.1 and 4.2, and your cost estimate indicates you can achieve that with just your steel, concrete and drywall, no need to include that requirement in any other section. This approach streamlines the paperwork tremendously. In editing the section, you would delete the sections not applicable for each credit.

It's definitely getting harder to achieve LEED Materials and Resources Credits 5.1 and 5.2 for regional materials. In LEED-NC Version 2.2, the first point is gained if 10 percent of the building materials are extracted, processed and manufactured regionally and the second point if 20 percent is achieved. For the full impact, review the USGBC reference guide, but summarizing: Start with the project construction cost and multiply by 0.45 to get the default value for the material cost in CSI MasterFormat 1995 in Divisions 2 through 10. Take 10 percent of that cost and track the manufacturer and original source of materials specified in Division 2 through 10. If you want to predict this point prior to construction, you'll need a cost estimate which breaks out materials and labor.

Green Links You'll Like

Green Paints: www.greenseal.org/findaproduct/index.cfm (paints and coatings which have achieved GreenSeal certification - even hotels which pass GS-33 environmental standards)

California VOC Limits: SCAQMD Rule #1168 VOC limits for adhesives & sealants (South Coast Air Quality Management District) program <http://www.aqmd.gov> Quality Management District program.

More California VOC Limits: BAAQMD Regulation 8, Rule 51 VOC limit's for sealants & sealant primers: Bay Area Air Quality Management District program, www.baaqmd.gov

Distance Calculator: www.indo.com/distance (distance calculator for cities around the world and in the US - good for determining how far it is to Bali, or whether a product qualifies within the LEED 500 mile limit)

Green Label Carpets: www.carpet-rug.org/drill_down_2.cfm?page=8&sub=4&requesttimeout=350 (which carpets, cushions and adhesives qualify in the Carpet & Rug Institute's Green Label Program)

FSC Certified Wood: www.fsc-info.org (worldwide Forest Stewardship Council certificate holders for FSC certified wood)

Mech/Elec and LEED

Frequently, project engineers need assistance with the LEED requirements that pertain to the plumbing, fire protection, mechanical and electrical specifications. This is the language we typically recommend the engineers use for LEED-NC version 2.2. It belongs in Part 1 of each specification section, in its own paragraph 1.x LEED Requirements. In addition, we often add the specific voc limits with the products in Part 2 of the specification sections, when we know which products are specified. Consider the following sample language:

LEED Requirements: Volatile organic content (VOC) properties of adhesives, sealants, sealant primers and paints specified in this Section shall not exceed the limits specified following. In accordance with Division 1 of the specifications, submit manufacturer's published literature indicating VOC content in grams per liter.

Adhesives and Sealants: Materials used inside the exterior weatherproofing system must not exceed the following requirements. Adhesives, Sealants, and Sealant Primers: South Coast Air Quality Management District (SCAQMD) Rule #1168, requirements in effect on July 1, 2005, and rule amendment date January 7, 2005. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36, requirements in effect on October 19, 2000.

Paints: Paints and coatings used on the interior of the building (defined as inside of the weatherproofing system and applied on-site) must not exceed the VOC limits and must not include any of the chemical components limited or restricted by the following standards: Architectural Paints, Coatings and Primers: Green Seal GS-11, Paints, First Edition May 20, 1993 for applications on walls and ceilings. Anti-Corrosive and Anti-Rust Paints: Green Seal Standard GS-03, Anti-Corrosive Paints, Second Edition, January 7, 1997 for applications on ferrous metal substrates. Clear Wood Finishes, Floor Coatings, Stains, and Shellacs: South Coast Air Quality Management District (SCAQMD) Rule #1113, Architectural Coatings, rules in effect on January 1, 2004 for applications on wood materials and for floor finishes.

Green Building Inevitable

Whether or not you studied green in school, you're not going to get through your career without working on green buildings and USGBC LEED certified projects. Besides the fact that sustainable design has always been a good idea, the commercial construction world has caught on. Bottom line for specifiers is to get your LEED registration – far more recognizable a credential than CCS – and more relevant to the teams you work with. Recent statistics from USGBC indicate 6 percent of new commercial construction started in the US in 2007 will be actively designed and marketed as green – whether certified under LEED or following green environmental principals. Five years ago, less than 1 percent of construction aimed at green. In Manhattan, the Lower Manhattan Construction Command Center states that all 50 projects over \$ 25 million in value are designed green. For fun, anticipated construction projects and street impacts can be seen at <http://www.lowermanhattan.info/construction/ipm/>

LEED Mandates Energy Performance Points

In accordance with direction from its Board of Directors and its LEED Steering Committee to immediately increase the LEED Green Building Rating System's impact in reducing building energy related greenhouse gas emissions, USGBC's membership has approved the update of all balloted commercial LEED Green Building Rating Systems with the following change: All LEED projects are required to achieve at least two Optimize Energy Performance points. This requirement is mandatory for all LEED projects registering after June 26, 2007. Projects registered prior to June 26, 2007 will not be held to this requirement; however USGBC encourages all LEED projects to strive to achieve building energy performance commensurate with this new requirement. LEED for Homes and LEED for Neighborhood Development projects are exempt from this requirement. For a pdf of the revised requirements go to <http://www.usgbc.org/ShowFile.aspx?DocumentID=2303>

LEED for Schools Mandatory

The US Green Building Council (USGBC) now requires school projects (K-12) registering for LEED certification use the LEED for Schools program; not the LEED-NC (new construction) program.

LEED for Retail Requires Manufacturers Certify Products

If your project is seeking certification under the new USGBC LEED for Retail, be sure your designers know to specify certified products to achieve various credits. For example for flooring, the USGBC LEED for Retail April 2007 Pilot Version 2 standard for flooring products requires the following: Select products that are either certified under the Green Label Plus program or the Floorscore standard or for which testing has been done by qualified independent laboratories in accordance with the appropriate requirements. From this writer's viewpoint, this restricts products available to designers, and puts an extra burden on building product manufacturers to get their products tested and certified. Previously, USGBC has taken the approach to set limits on VOCs and outgassing, rather than require products be listed specifically. One industry source said the cost of the manufacturer is approximately \$ 1,800 to perform the required tests. In fairness, perhaps independent testing is the only way to assure the marketplace moves to lower VOC products.

FloorScore is a voluntary, independent certification program that tests and certifies hard surface flooring and associated products for compliance with criteria adopted in California for indoor air emissions of Volatile Organic Compounds (VOCs) with potential health effects. The program uses a small-scale chamber test protocol and incorporates VOC emissions criteria developed by the California Department of Health Services, which are widely known as Section 1350. As part of certification, third party certifier, Scientific Certification Systems (SCS), (1) works with the manufacturer to identify the appropriate samples for testing; (2) reviews VOC emission test reports generated by independent testing laboratories for individual candidate products; (3) determines if the test results meet the California Section 1350 requirements for individual VOCs of concern; and (4) periodically inspects manufacturing plants to review product formulas, processing, and quality control in order to define the permitted use of the FloorScore seal.

Train LEED Teams Together

Several firms report that training multi-disciplinary teams together for the LEED Accredited Professional examination works well. One group consisted of two architects, a structural engineer, mechanical engineer and civil engineer who set aside study time each week for the exam. Each discipline benefited from an explanation of the typical credits by the others, and all passed the exam!

GreenBuild Metrics 2007

At GreenBuild in Chicago last week, attendance was reported at 22,400 with 9,000 of those as full program registrants. Although spirits were high, the registration staff was overwhelmed with up to 3-hour delays and overbooked conference rooms. Attendees report that those not able to get into their sessions have been offered a copy of the Conference Proceedings at no charge. Registrants were also given a copy of an exceptional new book by Paul Hawken titled Blessed Unrest. Also announced was GreenBuild 365, a new educational initiative for year-round training on the USGBC.org website and an eventual credit rating system which would be customized by building type. Proposals for educational sessions at next year's GreenBuild in Boston may be submitted on the USGBC website, with a reported deadline for submissions of January 18.

USGBC CSI MOU

The Construction Specifications Institute (CSI) and the U.S. Green Building Council (USGBC) signed a Memorandum of Understanding (MOU) on Wednesday, Nov. 7 at Green Build in Chicago. The new MOU provides an open exchange of information regarding "green" or "sustainable" building and maintenance practices during the entire facility lifecycle. It articulates several areas of joint interest, including development of documentation practices and procedures that achieve sustainability in construction. Key to this, said CSI executive director, Walt Marlowe, is the opportunity for members of each organization to collaborate on the development of practices and procedures to achieve sustainability in construction.

SCAQMD Rule 1121

On a water heater waiting for delivery on a sidewalk in Providence, Rhode Island was the label: Gas Water Heater LSN 0419, SCAQMD Rule 1121 Notice: This product is manufactured for sale subject to product variance. It cannot be sold or installed under the SCAQMD after December 31, 2007. Apparently the South Coast Air Quality Management District (SCAQMD) regulations from California are requiring new labels from manufacturers. Are manufacturer's shipping non-complying products from California eastward or are they labeling all their products this way?

BIM and Specs

Integrating SPECS AND BIM

How will the rapid growth of Building Information Management (BIM) software affect the preparation of specifications? What's all this talk about embedding spec information in the attributes of CAD objects? Is BIM only a fancy version of desktop publishing? Will building product manufacturers be able to cope with BIM? A few plus-and-minus observations from the shallow trenches of 12 recent BIM projects:

BIM Improves Spec Coordination

BIM software can model the building exactly - you can potentially query the model for how many doors or square feet of paint are necessary - and that's a potential big plus for specifiers trying to make sure the drawings and specifications are coordinated. Minus: Most architects are using BIM as a design tool, and not modeling every inch of the building. There's no sure coordination tool built into a project that's only partially modeled. At a recent BIM conference in Boston, one speaker remarked that their firm took a designer-only approach to BIM. Their architectural BIM model would only include major design elements like the building exterior, and interior materials were likely to be 2-D representations drawn onto interior elevations without intelligence. That is, a door may look like a door in an interior elevation, but if it hasn't been entered as a door object, it's just a pretty picture. In addition, for many projects the detail sheets aren't enlarged portions of the BIM model, they are representative details from the firm's library of details.

BIM Doors Are Perfect

Sure it's easy to specify a door in the model - 3 feet by 7 feet by 1-3/4 inches, ANSI/SDI A250.4, Level 2, Performance Level B, Model 1 full flush hollow-metal door, one-hour fire-rated, shop-primed for site finish, meeting NFPA 252, gobbledygook thermally broken, gobbledygook NFPA 80 and then there's the frame and 4 more standards or specify the door as Steelcraft L20 Model F and be done with it or link to the internet http://www.steelcraft.com/pc_doors_lseries.asp and hope the page hasn't changed since you inserted it. Minus: No, it's not easy to specify a door in the model unless the person inserting the door is an absolute expert or unless the door knows its environment - i.e. in an exterior wall in a fire-rated exit stair in a 34 story condominium building in Miami. Way too much of a burden for a designer when room sizes and functional relationships and architectural design are paramount. Most architects will concede that many detailed product decisions are only flushed out in the submittal process by a subcontractor or distributor really familiar with the requirements - architectural specs are not the same as a purchase order to the mill. This can completely break apart the typical scenario of a specifier seeking advice from a building product manufacturer's rep as to what to include in the spec so a subcontractor won't have to guess with their quote in the 48 hours they have to put the bid together. Is the specifier supposed to step aside and tell the rep to visit the BIM model and put their own info in? Maybe.

BIM Reduces Bidding Costs

Owners and builders clearly expect the BIM model to provide reliable information, including quantities and links to cost information. How better to reduce inaccurate quantity take-offs and unseen conflicts between building systems. How better to reduce the \$1 billion plus subcontractors spend annually preparing their bids for projects. Conversely, building product manufacturers may be asked to participate in reverse auctions as every product is reduced to a commodity and cost triumphs over quality. (In England, Quantity Surveyors for projects regularly develop quantities of materials for subcontractors to bid on, reducing the price differences to volume discounts and labor costs. Reverse auctions work only if detailed criteria are available.) Minus: I believe the cost of a project is as much determined by the location of the project, availability of skilled workforce, schedule, and goodwill of the participants as by the cost of the materials only. Rule-of-thumb estimates say that building materials are less than 45 percent of the cost of construction. Architects have been wary of providing quantities. Some legal groups are standing by ready to ask a court to determine how liability is shared when many team members share input and output from a model - whether incomplete or incorrect information is professional negligence or just the normal standard of care. Personally, I don't believe the BIM model will change the standard of care already established by the courts.

BIM Wants Costs Not Specs

The BIM manager of a large firm was honest enough to admit that better specs weren't their goal for BIM - the goal was better design, improving resources for design decisions, better cost control and comparisons, faster construction document production and the flexibility to make major changes late in the process quickly. Watching a BIM model take 4 inches out of the floor-to-floor height of a building in minutes with corresponding changes in mechanical systems and exterior elevations is completely amazing. Minus: The current generation of CSI-bred specifiers is aging,

and the gauntlet of their brass-knuckled, I-can-specify-anything approach hasn't been picked up by new-to-the-game architects. In BIM in design the issue isn't the spec, the issue is the quality of design and cost control for the project versus the owner's budget versus the performance of the building. While the construction managers don't want the responsibility and liability for product selection, they are quick to provide value analysis to control cost through reduction of quantity or quality. In all fairness, that's the right thing for them to do - unless they want to start designing.

BIM Needs UniFormat and MasterFormat

Plus: Some BIM software comes with CSI 5-digit MasterFormat numbering embedded and it is comforting that new software takes existing tools and puts them to work, and 4-D models can be represented as 3-D models even 2-D drawings. Keynotes can be used to identify materials and print schedules and reports. Minus: Now the hard part. CSI MasterFormat numbering is a product classification system. A BIM model is an assembly system. Using MasterFormat is the same as trying to put a square peg in a round hole - doesn't work - won't work - can't work. Most major cost estimating firms, contractors and construction managers in the United States use UniFormat II as the basis of their cost model. BIM will eventually use the same protocol. We should be using UniFormat II and the new ASTM standard classification for elemental cost summaries. The US Department of Commerce Technology Administration and the National Institute of Standards and Technology got it right in NISTIR5839. I believe we inherently understand terms such as foundations, exterior enclosure, roofing, interior finishes better than 03-3000, 07-5000, 09-2600.

I have given my 5,000 hours of service to CSI (probably more) but we are not in a tool shed picking parts. The airplane and automobile designers have known for two decades that they profit by manipulating assemblies and assemblies of assemblies. The 5-digit to 6-digit conversion was implemented over the objection of the initial CSI task team. Specifiers are confused by the numbers and very slow to adopt the new system. Libraries of catalogs of building products are being taken out of CSI MasterFormat order and put on the shelves in alphabetical order. (and how many binders have Div 3, 5, and 9 on their spines - where were we to put those?)

As much as I like catalogs, manufacturers who don't move their information to organized on-line cataloging sites won't reach their intended audience. Enter 'wood doors' in Google and you get 3,960,000 entries in 0.21 seconds. Enter 'wood doors' in ARCAT or Sweet's and you get numerous companies that actually make wood doors - including many with guide specifications.

What's A Specifier To Do

Plus: The specifier is still an integral part of the design team - knowledge of building materials and assemblies is indispensable regardless of BIM software.

Plus: The specifier will need to coordinate the symbols and attributes in the BIM model so they coordinate with external databases maintained by specifiers, architects, contractors, estimators, and product manufacturers.

Plus: Maybe they got it right in 1920 when manufacturer's had standard spec sheets, and drawings just indicated deviations. Maybe specifiers should look to the guidance of national standard specifications like UFGS or those used in Canada, England, even many regional and manufacturer's spec databases which may set the tone for the specifications of the future.

Plus: Its a great time to get involved in defining the construction information systems of this new BIM world. Please roll up your sleeves and help.

(Note: Much of this material was included in the presentation at the Ecobuild Federal Conference Program at the Washington DC Convention Center, in the session "Integrating BIM and Specifications." For a free copy of the session handout, email mkalin@kalinassociates.com.)

One More BIM Update

More than 60 people attended a session presented by Mark Kalin on Integrating BIM and Specifications at Ecobuild in Washington DC. Strong interest! More importantly, Stephen Hagan FAIA and Calvin Kam with GSA presented "Implementing BIM for Planning and Design: The GSA Story." GSA has had tremendous success with their BIM prototype projects, with reports of 'eliminating thousands conflicts in design, 40 percent less waste at the site, months saved in construction time, useful on both new and existing buildings.' My personal opinion is that BIM has already started to sweep the architectural industry and firms will not be able to compete without using it. The possibilities for improved coordination are staggering, but the point is to adopt BIM sensibly without doing the same to your firm (staggering, that is). Firms from 6 people to 600 people have already adopted BIM, for as long as 5 years. ARUP engineers based in London (17 offices worldwide, 8,000 employees) has adopted BIM worldwide in their firm. Email mkalin@kalinassociates.com for the BIM and Spec seminar materials.

SCIP AND BIM

The Board of Directors of SCIP (Specifications Consultants in Independent Practice) has established a BIM Committee, and has already started a dialog with the creators of NBIMS (the National Building Information Model Standard). The primary goal of the committee is to help shape the integration of specifications as we know them today with the BIM models of the present and future. Email Dennis Hall, dhall@hallarch.com if you're interested in participating.

BIM Goes Global

The Construction Specifications Institute (CSI), Construction Specifications Canada (CSC), buildingSMART Norway, and the STABU Foundation from the Netherlands have signed a Letter of Intent to share unified object libraries for a controlled dictionary of construction terminology. While a traditional lexicon uses a phrase to define a term, computers require explicit information to distinguish a particular concept. An object-oriented terminology library identifies terms using a serial number – a global unique identifier and its definition is described by associating the term with others. The rules are dictated by the new ISO Standard: ISO 12006-3, Building Construction: Organization of Information about Construction Works, Part 3: Framework for object-oriented information. Paraphrased from an article by Roger Grant, CSI's director of technical services and development in the January 2007 Construction Specifier. More info at <http://www.icis.org/index.php?page=tc/index.php>

Legal Issues and BIM

Earlier this month, Sue E. Yoakum, Esquire of Donovan and Hatem LLP Counselors at Law in Boston made a presentation to the Boston Society of Architects BIM Committee. Sue's definition of BIM: An intelligent model made up of objects that have attributes and a data base that can be used to visualize the design, prepare cost estimates, understand energy loads, prepare construction schedules, perform clash detection, assist with construction sequencing, assist with facility management and can virtually build the design and highlight issues that may occur during construction prior to stepping foot on site. The legal issues: database ownership, professional liability, establishing a level of care, waivers of consequential damages, and ownership vs. leadership were discussed among the 40 people attending. Note that for some owners, the benefits of BIM including cost and schedule control may outweigh the contract issues - that is the owner will accept the risk of BIM rather than the team. For a copy of the PowerPoint presentation, email mkalin@kalinassociates.com and ask for the BIM and Legal PowerPoint.

Specs and IFC

As the standards for representing materials are developed in BIM models, a hierarchy of questions has developed relating to the architect's project phase, frequently using OmniClass Table 31 as a structure and represented by Industry Foundation Classes (IFC's) as developed by the International Alliance for Interoperability (IAI). Decisions to be made before moving from schematic design to design development to construction documents will live in the programming. Using carpeting as a simple example, in schematic design carpeting is a flooring type. In design development, three decisions should be made - type as broadloom carpet or carpet tile; selection by product name or allowance; installation by the direct glue-down method, or stretched-in. During the construction documents phase an even wider group of choices should be made. For a copy of the files for the carpet example, email mkalin@kalinassociates.com and ask for the Carpet IFC tables.

NBIMS and Specifiers

A project team continues to meet to include specifier's interests in the US National BIM Standard to be issued next year. Bill East of the US Army Corps of Engineers heads the development team which includes several SCIP and CSI members, as well as participants from the UK and Norway. The project is to be based on the Industry Foundation Class (IFC) model and International Framework for Dictionaries (IFD) classification scheme.

Benefits to specifiers include methods to establish the typical set of properties required to generically define specific products and work results in a BIM; to establish the connection between the specifications needed to model at a given phase of project and the accompanying contents of a BIM; and to provide a starting point to coordinate the transition from paper data sheets to the electronic submittal of information from suppliers and manufacturers.

Secondary benefits will likely include the following: The impact of cost and schedule may be seen more clearly at an earlier stage of design; contractors may be able to evaluate alternative building methods through the BIM; and by using the specifiers information a partial project definition may be created without requiring geometry in the BIM.

As a starting point for specifiers, materials will reference OmniClass Tables 41 and 49. Products will reference OmniClass Table 23. Work results (spec sections) will reference OmniClass Table 22 (MasterFormat). As a starting point for designers, elements will reference OmniClass Table 21 (UniFormat) and projects will reference OmniClass tables 11 and 12. More info on OmniClass at www.omniclass.org.

BIM in Architectural Education

At the April 2007 meeting of the BIM Committee of the Boston Society of Architects, representatives of Harvard, Northeastern, Wentworth and the Boston Architectural College were asked to comment on the impact of BIM on architectural education. The striking response was that BIM is seen as a collaborative tool, but that students must spend most of their time learning fundamentals and concepts which must be internalized individually. Architectural schools won't require students to use a particular software package, rather the choice will be made by the student as they choose what tools to use to communicate their designs. Len Charney of The Boston Architectural College stated that they were recently selected by the American Institute of Architects as the host for the AIA Practice Academy Initiative for BIM. Len showed four examples of how architectural firms were introducing students and recent graduates to the BIM systems in their firms.

BIM Gives Extended Life to Specs

The typical shelf life of a spec for a construction project starts with a draft of the spec circulated to potential bidders, reaches a zenith during the three weeks the project is bid or negotiated, and then vanishes some time around the end of construction administration. The office will hang on to the bound spec for legal purposes, but soon only the electronic files are left, probably more for their value on another project than the one just constructed. In the near future BIM will change the shelf life of a spec, primarily because of electronic record keeping. Criteria in the spec, such as the water resistance of an assembly or the length of the roofing warranty can be captured and are of real value to the owner. Fundamental equipment information, the manufacturer's product name, and color of paint can be added to the spec (or the portion of the database that used to be called a spec) and maintained for the life of the project. Many owners have stated that large amounts of money are spent trying to recreate the database of what was installed. The easy solution is to couple the designer's intent in the spec, with the specifier's requirements for quality, with the contractor's purchase orders.

AGC BIM Update

The Associated General Contractors of America (AGC) organization held a 3-day BIM Forum at the Pinehurst Resort in North Carolina. The BIM Forum is AGC's task force on Building Information Modeling. During the first session, over 75 BIMForum members and AGC members learned about the GSA's most recent activities, GE Johnson's process for systems coordination, design analysis from KlingStubbins and how BIM is changing Turner's process. The academic subforum started developing curriculum; the software subforum discussed education and training the industry. The builders and designers subforums worked together to define a process that the industry could adopt to better utilize building information modeling. The BIMForum membership will continue to work on these issues until they reconvene this fall, outside of Boston, MA. For more info go to <http://www.bimforum.org>

BIM Specs

BIM: Building Information Model—a digital representation of physical and functional characteristics of a facility that serves as a shared knowledge resource forming a reliable basis for design decisions throughout its life cycle. **BIM Specs:** The neck of the funnel between the designer and constructor. The objective of BIM Specs: Establish an open-definition and interoperable format for the identification of properties required to specify materials, products, and equipment. Objectives must include:

1. Property Sets Definition: The full set of properties needed to specify materials, products, and equipment to a typical level of detail.
2. Property Set Processes Maps: The identification of who is responsible for identifying the requirement for property sets, general classes of properties, type of property specifications, and specific property values.
3. Property Set Exchange Requirements. The identification of the specific data needed to be exchanged at specific points within the life of the project.
4. Property Set Models: The individual specification data already contained in the IFC 2x3 Model standard must be compared with the data requirements required by the Exchange Requirements. Additional implementation methods including PDF forms, XML schema and spreadsheet formats may also be considered to assist the exchange of this information.
5. Dictionary: The set of properties needed by construction specifiers should be compiled and submitted to the International Framework for Dictionary (IFD) classification scheme through the OmniClass classification scheme. OmniClass classification as the United States view of the IFD should work to include the properties within the OmniClass taxonomy.
6. Commercial Adoption: While adoption by some stakeholders, such as government agencies, can be expected as a result of national BIM standardization in the upcoming NBIMS standards, it is essential for widespread industry adoption that commercial support of the properties and exchange methods are ultimately adopted by product manufacturers and service providers.

SPIE Work Group Report Available

For the past year, Specifications Consultants in Independent Practice (SCIP) has been working to support the National Building Information Modeling Standard (NBIMS) activities, and their Specifiers' Properties Information Exchange (SPIE) working group has compiled Version 1.0 of the SPIE dictionary. In the opinion of Bill East, manager of the effort for the US Army Corps of Engineers, this report is a great leap forward in the data required in a BIM model by specifiers. For a copy, email mkalin@kalinassociates.com

National BIM Standard Available

The first version of the National Building Information Modeling Standard (NBIMS) was released for a two-month industry review period earlier this month. The document is titled National Building Information Modeling Standard Version 1.0—Part 1: Overview, Principles, and Methodologies and provides the capital facilities industry with its first comprehensive look at the full scope of requirements for Building Information Modeling (BIM). The review period will span from March 12, 2007, until May 21, 2007. Those interested in reviewing the document can obtain it from the NIBS National BIM Standard web site ([link below](#)). This document is the first to be issued under the new NIBS buildingSMART Alliance initiative announced February 27, 2007. The NBIMS will provide the diverse capital facilities industry with a vision of how to support and facilitate communications throughout the facility lifecycle, from project inception through design and construction, even past demolition for improved operations, maintenance, facility management, and long-term sustainability. The document was assembled by over thirty subject matter experts from across the capital facilities industry. It provides both a snapshot of where this burgeoning capability exists today as well as identifies work still needing to be accomplished. This first part of Version 1.0, which is now out for review, will be followed by Part 2 at the end of the year. Part 2 will contain items to be standardized across the industry using the NIBS congressionally authorized consensus process. Access the standard at <http://www.facilityinformationcouncil.org/bim/publications.php>

Satellier Solidifies Position in BIM

Satellier, a global leader in design support and Building Information Modeling (BIM) services to the global architecture, engineering, construction (AEC) industry, announced 11/30/07 the appointment of three key executives to the company: Anthony Flynn, former chief marketing officer (CMO) and vice president at Bentley Systems, Inc., joins the company as CMO and executive vice president of sales and marketing; industry veteran Paul Doherty, AIA, joins as chief technical officer (CTO); and Robert Guarcello Mencarini, AIA, former client services architect (CSA) at Revit Technology Corporation and Autodesk Inc., and one of the world's foremost experts on BIM, joins as director of BIM services. The executive appointments follow a \$10 million investment by Sequoia Capital into the company and the June appointment of Stephen Barnes, former executive vice president of AECOM, as president. CEO Michael Jansen, comments, "The feedback from architects, engineers, and contractors is that BIM and workshare services bring them significant competitive advantage -- they want higher utilization of these technology and business platforms." News link at: <http://www.itnews.it/2007/1130090401745/satellier-readies-for-next-phase-of-bim-and-workshare-growth-with-appointment-of-three-key-executives.html>

Master Specifications

From sixty pages of hand-written master specifications compiled in 1856 from specifications prepared by New York, Boston and Philadelphia architects: Expressions in parenthesis () may be omitted, those in brackets [] substituted, those wholly enclosed may be changed. Their definitions included:

Superintendence: The Contractor is to give his personal superintendence and direction to the work, which is to commence at once and finished and the building fit for occupation by year next. Also to furnish all labor, transportation, materials, apparatus, scaffolding and utensils needful for the full performance of the work herein described in best manner, according to the true intent and meaning either expressed or implied of the specifications and the drawings which accompany them.

Quality of Work: All work and materials to be of best qualities in all cases, unless herein especially set forth to the contrary subject to the approval or rejection of the Architect. To be finished with all expedition consistent with thorough and good workmanship.

Power of Architect: The Architect to have full power to reject any material or work he may think unfit or of unsound character and cause same to be immediately removed or reconstructed at Contractor's expense, in case of whose refusal to comply with Architect's orders, the later is to have full power to procure materials and have it done by the workmen and to charge expense thereby incurred to the Contractor and to deduct same from amount due or to become due him. Sound familiar in 2007?

Everything Else

NYC Hardens Stair and Elevator Enclosures

The Department of Buildings in New York City has issued new regulations to strengthen the impact resistance of stair and elevator enclosures in high-rise office buildings: Stair and elevator enclosures in high-rise office buildings in New York City which are constructed pursuant to applications filed on or after July 1, 2006 shall comply with requirements of Section 32-05 of Chapter 32 of Title 1 of the Official Compilation of the Rules of the City of New York regarding "Impact Resistant Stair and Elevator Enclosures." One solution in the spec is to reference the regulation, the other is include a possible solution in the spec: Unless indicated otherwise on the Drawings, provide UL Design Number U415 System F, modified to accommodate a double layer face side; 2-hour fire endurance rating achieved using standard shaftwall with 4 inch 20 gage studs spaced 24 inches on center, with a base layer on the tenant side of impact resistant gypsum board and face layers of 5/8 inch thick Type X gypsum board.

USPS Requires Larger Mailboxes

Buildings permitted after October 4, 2006 are required to comply with the new standard from the US Postal Service, USPS-STD-4C, which requires ganged mailboxes with stronger locks, a larger size mail box (for example, 12 inches wide by 15 inches deep by 3 inches high), and a parcel locker for each 10 units served. The grace period for the older type of mailbox has expired! Look to specs in Section 10550 on the ARCAT site for Auth-Florence and Postal Products Unlimited for specs updated to the new requirements. Note that under Standard 4C the local postmaster has the authority to allow for alternate means for delivering parcels in lieu of parcel lockers on a case by case basis (for example an residential high-rise with a concierge staff and secure storage area).

National Call-Before-You-Dig Site Launches

The Common Ground Alliance (CGA) has just launched a national 811 Call Before You Dig number and website to help save lives and protect underground infrastructure. www.call811.com is designed to serve as a national resource for professional excavators and the public. The new website will provide the professional digging community with the tools they need to begin educating their employees and customers about the new national 811 number. One easy phone call to 811 will get the approximate location of underground utility lines marked for free. The number 811 is the new FCC-designated national N-11 number created to eliminate confusion of multiple "Call Before You Dig" numbers across the country. The service connects callers with local One Call Centers who notify the appropriate local utilities, who then send crews to the requested site to mark the approximate location of underground lines for free. In 2004, according to industry data, CGA estimates there were approximately 680,000 underground line strikes resulting in damages, including service outages and injury. Only 35 percent of homeowners indicated they have called to have their utility lines marked in the past. For more information about the 811 service and campaign, visit www.call811.com.

Asbestos in VCT Again

It's been so long since asbestos was taken out of vinyl composition tile and other building products in the US that many specs don't even include the prohibition. Looks like its time to add the warning back into the specs, as recent boxes of VCT from Canada contain an asbestos warning label.

Respect for Manufacturer's Specifications Increases

When I started my career as a specification writer, manufacturer's specifications were suspect. I was taught to watch out for hidden proprietary language and marketing fluff. The specifications were hardcopy only, and if a rep sent a spec on diskette it was usually in a format that was unreadable, with broken formatting and strange paragraph numbering. Today, manufacturer's specs are state-of-the-art. With the complexity of materials and changes in the marketplace, few architects or specifiers can claim detailed knowledge of what is available. At a recent CSI event, a conversation between several senior specifiers acknowledged the time saving a manufacturer's spec could provide in preparation of the spec, and even more importantly, the prevention of fake specs. Manufacturer's specs list only the options really available, avoiding the mix-and-match that some compiled master specifications can't prevent.

True Story: Recently a clause in a manufacturer's spec averted a potential disaster. A custom skylight spec included a requirement for the skylight manufacturer to provide an engineering analysis that if one pane of the skylight was broken, the rest of the skylight would not progressively collapse. When another skylight manufacturer was selected, they claimed to be able to meet this requirement but could not provide the engineering analysis. With the architect's insistence on the requirement, the second skylight manufacturer did the calculations and found that they had to make a modification to their framing in order to comply with the requirement. The first manufacturer knew the requirement was a safety concern, and even though they didn't get the project, their technical knowledge contributed to the safety of the project.

Exterior Wall Mock-Up Testing

For your testing spec, a comprehensive approach to testing exterior wall mock-ups for air and water infiltration includes the following language: Test mock-up for air and water infiltration in accordance with ASTM E 1186 (air leakage location) or ASTM E 783 (air leakage quantification), and ASTM E 1105 (water penetration). Use smoke tracer to locate sources of air leakage. If deficiencies are found, reconstruct the mock-up and retest until satisfactory results are obtained. Deficiencies include air leakage beyond values specified, uncontrolled water leakage, unsatisfactory workmanship. Perform the air leakage tests and water penetration test of mock-up prior to installation of cladding and trim but after installation of all fasteners for cladding and trim and after installation of other penetrating elements.

Don't Grout Interior Steel Frames

Some Architectural Specifications require frames in stud and drywall partitions to be filled with grout for sound deadening or to enhance structural integrity. The Steel Door Institute is opposed to this practice for the following reasons: ANSI A250.8 paragraph 4.2.2 and ANSI A250.11 paragraph 2.2 both address the question of grouting frames. The paragraph cited in ANSI A250.8 gives a bit more information on the problems related to moisture in grout. In drywall construction, this moisture has two places to go. It can soak into the drywall, potentially destroying its cohesive integrity and thus the ability to retain anchors or frame integrity, or it can leach downward where it will cause premature rusting of anchors, screws, stud connections, bottom of frames, etc. Grouting does not appreciably afford any additional structural rigidity to the frame. As an example, slip-on drywall frames have passed fire and hose stream tests, cycle tests, and in some cases impact tests without being grouted. If the intention is for sound deadening, SDI 128 (Section 3) should be consulted. In addition, the same insulation as used between wall studs (generally lightly packed fiberglass) will serve as a sound deadener without the potential for damage to the frame or wallboard. The website of the Steel Door Institute states that it is their opinion that grouting should never be specified for drywall construction.

Coastal Cities Underwater

Architects have a key role to play in reducing global warming as buildings contribute to significant carbon dioxide generation, both as building products are produced and during the operation of the buildings. It's a problem we're all going to have to tackle, and small reductions add up. For example, the ocean transport companies have determined that if their ships travel 20 percent slower, the carbon dioxide output is reduced by 50 percent. To view the AIA 2030 map of coastal cities showing the now and then of a 3 meter rise in ocean levels, go to http://www.architecture2030.org/current_situation/coastal_impact.html

The American Specification Institute

We believe contractors around the country will be pleased to recognize specifications prepared by the American Specification Institute and will feel sure of receiving fair and equitable treatment under the terms of the documents. We promote the four C's of specification writing: Clear, concise, complete and well-coordinated with drawings. Specifications should be fair and impartial. We propose to divide the country into 13 advisory committee districts for our local chapters. While we initially believed in 8 elements of a specification: Contract and Legal, Economic, General Descriptive, Preliminary Preparation, Materials, Design and Construction, Schedules and Results we now propose 31 Divisions. – actual language from The Specification Record of the American Specification Institute, incorporated March 17, 1921 and last heard from in 1931 as the depression began.

A Final Word

SCIP's membership has grown by over 50 percent since the by-laws were amended to allow in-house specifiers to join the 120 independent specification consultants who were already members. Over the 40-year history of SCIP, thousands have contributed their knowledge. Our annual meeting held at the CSI Convention, and regional meetings held with the CSI Regional Conferences have produced a tremendous network of individuals interested in specifications and advancing construction knowledge. Please consider adding your specification expertise to our collective pool of talent, perhaps by attending our national meeting to share what you know with your peers, perhaps by writing articles for KnowHow, perhaps by coming up with a new goal for SCIP to achieve, with you as the chair of a new committee.

To receive this Newsletter in Word format, email mkalin@kalinassociates.com. To receive a twice-a-month email newsletter for specifiers, sign up for the free specifier's newsletter at www.arcat.com

And a final taste of spec humor: SCIP is proud that our new by-laws have erased the membership distinction between the in-firm specifiers and the out-house specifiers. We're a small community, and glad that you are a part of it. -MK