Subject: Exterior Building Enclosure News
Date: Monday, August 15, 2005 11:19 PM
From: Richard Keleher <kel@rkeleher.com>
To: Richard Keleher kel@rkeleher.com
Conversation: Exterior Building Enclosure News

Hi all, Richard here ...

As I know you're interested in Building Envelope issues, I'm sending you my monthly newsletter. I also value your privacy and if you would prefer not to receive this newsletter, please hit reply and change the subject line to "Delete from newsletter list" As always, I'd be glad to discuss your concerns and comments on these issues.

Tip of the Month: Cartoon Sets for Construction Drawings

Do a “cartoon set” or “storybook” on letter-size paper, with one page for each sheet. This is a common practice in some offices, but I have seen it less and less lately. The typical practice is just to start with the wall sections (which should be at 1/4″ = 1′-0″ or 3/8″ = 1′-0″) and “zoom” in a little to 3/4″ and then again to 1-1/2″ scale and then, for a few typical details, to 3″ scale. Very rarely do details get to the half size scale that is necessary to show many conditions for the enclosure details. And hardly ever are isometrics provided. Isometrics are critical details for showing intersections. And intersections are where the problems occur! I recommend that you save drafting time, coordination time, and printing costs by planning your set of construction drawings!

The cartoon set also:

1. Can be used as a way to manage the project budget, by assigning a budget to each sheet and tracking progress sheet by sheet.
2. Allows consideration of what details are the typical details. These details should be developed VERY EARLY, in the Design Development phase, so that they can be used repeatedly in the smaller-scale details. Too often, when “zooming,” it is only when you finally get to looking at the large scale detail (or isometric) that you realize the clearances and dimensions required. Then you have to go back and find and then change all of the previously drawn details. This is how you can save coordination and drafting time.
3. Allows you to skip whole levels of details (skip the 3/4″ and 1-1/2″ scale details in the example above). This will save you coordination and drafting time AND printing costs (fewer details in the set!).
4. Gives an opportunity to consider what details can be borrowed from other projects.
5. Avoids the likelihood of duplication of details by different team members.

Product of the Month: Extruded Silicone

Extruded silicone is a product that is useful for joining windows, storefronts, louvers, doors and curtain walls (“opening systems”) to the air barrier in wall systems. In New England, the typical air barrier for commercial construction is a rubberized asphalt peel-and-stick-membrane. At intersections, the manufacturers typically require the use of a sticky “mastic” to complete the seal. When the opening systems are installed after the membrane, as they usually are, the opening system subcontractor has to make the connection to the air barrier. These trades do not like to work with sticky mastic. It gets all over their tools, the products they are installing, etc. The sealant that they are used to using is silicone. By using extruded silicone as the transition flashing, they can use silicone sealant to complete the seal. I have found that even with skeptical contractors, once they have tried using extruded silicone, they are quick to adopt it as their method of choice.

Add to your specs: Connect adjacent wall air and vapor barrier membrane or transition strip (rubberized asphalt sheet) to penetrating elements (door/storefront/window/curtain wall/louver/pipe/conduit etc.) using

extruded silicone flashing with prefabricated corners.
- Products:
- Dow Corning 123 set in Dow Corning 790 silicone sealant.
- Pecora Sil-Span set in Pecora 864 silicone sealant.
- Tremco EZ Seal set in Tremco Spectrem 1 silicone sealant.

News of the Month:

1. Keleher Website: A new website is now available with information on my consulting services: www.rkeleher.com
2. The AIA passed a Resolution at the Convention in Las Vegas, committing the Institute to promoting Leadership in Building Science and Technology.

   It is now the task of the Board Knowledge Committee, in collaboration with the Building Science Knowledge Community to recommend the manner in which the Institute can advance its leadership in these aspects of our practices to promote the creation of better building enclosures.

   This initiative, combined with the ongoing growth of Building Enclosure Councils (www.bec-national.org) is the beginnings of a movement to include building science in the architectural curriculum (more on this in later issues) may be the start of the architectural community taking back leadership and, therefore, credibility with regards to the building enclosure. I am attaching the June edition of Energy Design Update, which describes my early efforts to influence NAAB.

   The building enclosure, so intimately involved with the building design and usually the image we show in our architectural journals, can and must be mastered by practicing architects. We run the risk of losing the business of being prime professional for the performance (and maybe even the looks) of the building enclosure if we don't step forward and take back our role as the creators of building enclosures.

More next month!

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Richard Keleher **AIA, CSI, LEED AP**

ARCHITECT 460 Powder Mill Road, Concord, MA 01742

Phone: 978.369.4550 Cell: 978.944.2734 kel@rkeleher.com

www.kel@rkeleher.com

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INDUSTRY NEWS

Teaching Architects Building Science

When energy experts gather at conferences, they have been known to grumble that the majority of architects have an imperfect understanding of building science principles. According to this view, deficiencies in architectural education partly explain the current crop of lawsuits over ice-dams, window leaks, rot from hidden condensation, and unbalanced HVAC systems in new buildings.

Among those complaining that US architecture schools fail to provide an adequate education in building science principles are many architects, including Richard Keleher of Concord, Massachusetts. On May 15, 2003, Keleher drafted a "Paper of Concern" to the organization responsible for accrediting architectural schools, the National Architectural Accrediting Board (NAAB). Under the heading "Architects Not Technically Knowledgeable," Keleher wrote, "The [architecture] schools are not providing sufficient education in the areas of the building envelope/enclosure and the relevant building science. Practitioners in the Boston area find that their staff often doesn't understand the principles governing the design of building envelopes and the control of heat, air, and, especially, moisture (both liquid and water vapor) within buildings and across and within the building envelope. The schools of architecture should be educating architects as to the principles (technology) of building envelopes and the relevant building science."

According to Keleher, he has received "no reply, not even an e-mail" from the NAAB in response to his memo. Reached by phone, Robert Odermatt, an architect and president of the NAAB board, told ***EDU*** that he has no recollection of reading the Keleher memo. Odermatt asserted, however, that NAAB was adequately addressing Keleher's concerns. "We are quite aware of these issues," said Odermatt. "Periodically, every three years, we have a validation conference to look at the things in the NAAB criteria that should be adjusted. Obviously, those kinds of concerns were addressed at the last conference. But there is pressure that comes from the limited amount of schooling that students have. They need to study historic preservation, accessibility, codes, sustainability, as well as all of the design issues. The question is not, 'Does a subject need to be addressed?' but 'When does it need to be addressed?' We have been trying to separate what happens in school in terms of education from what happens in training, during the internship. What you have to understand is there are only so many semesters in a student's education. There is also a pressure to make the profession accessible —

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