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commissioning criteria found in the International Energy Conservation Code.

At this point, the building official is charged only with verifying that the special inspection or commissioning reports have been provided to the building owner. The building official is not responsible for report review and approval. Also, post-occupancy reporting may be mandated as a "jurisdictional choice."

ASTM and other organizations are currently debating the minimum certifications, knowledge and experience required to become a commissioning agency or commissioning inspector.

Chapter 10 has provisions for existing buildings similar to Chapter 34 of the International Building Code while Chapter 11 deals with existing building site development. This is a new concept in the code, as it addresses building landscaping, site hardscape and surface vehicle parking.

Chapter 12 covers referenced standards with appendices finishing the document and is adapted by jurisdictions or projects to suit local needs.

A "jurisdictional requirement" is a mandatory requirement under the IgCC at adoption of the code. "Project electives" encourage implementation of green practices which are difficult or impossible to mandate (e.g., brownfield remediation). This allows building owners and designers a degree of flexibility.

The new International Green Construction Code is coming. While at the IgCC Final Action Hearings in Phoenix last year, we heard many major jurisdictions adapting the IgCC Code either optionally or as mandatory. Even if it is not adapted by local jurisdictions, green code concepts will most likely appear in specifications as "best practices" for green construction.

Regardless of adoption by local jurisdictions, the IgCC Green Code has impact for the design, construction and building owner and manager community for the complete building life cycle. ■

Roofing Building and Energy Codes are Changing

CRCA heard from many building officials in Illinois, "to change code get involved at the International Code Council Hearings so we don't have to amend a national publication."

NRCA's Mark Graham and CRCA's Bill McHugh have attended several International Code Council Hearings to participate in the hearings that result in the published code. CRCA welcomed Mark to CRCA's Trade Show & Seminars and he delivered a roofing summary of the 2012 International Codes (I-Codes).

Reflective roofs, ballasted and garden/vegetative roofs meet Chicago's 2009 Energy Code.

"Illinois is a home rule state. Local municipalities review their building code periodically and adapt versions of the International Family of Codes," stated Graham, NRCA's Associate Director of Technical Services. Most of Illinois uses the 2006 or 2009 versions of the I-Codes.

For CRCA members, the International Building, Residential, Energy, Fire and Plumbing Codes affect what building owners and managers demand for new construction and reroofing. Chapter 15 of the International Building Code sets mandatory minimum requirements for and is titled, "Roofing and Rooftop Structures."

In Illinois, the State is in the process of adapting the 2012 International Energy Conservation Code (IECC). This will affect the amount of roofing insulation required in both new construction and reroofing situations.

The current 2009 IECC requires R-20 insulation on commercial building occupancy roofs. The 2012 Code jumps to R-25. The State of Illinois passed a law mandating that 12 months after the ICC publishes a new version of the IECC, it becomes State Law. ICC published the 2012 IECC June 1, 2011. Therefore, roofing projects permitted after June 1, 2012, will have to comply with 2012 IECC unless something changes during the adoption process in the next few months.

Some communities require above R-25 Insulation. Cities close to O'Hare or Midway Airports may require higher R-values for the sound transmission characteristics of the insulation. Some communities require close to R-30.

CRCA has submitted a comment to the state of IL to bring relief to the building owners and managers in reroofing situations. We've requested that the R-value remain at R-20 for these projects.

Why? According to NRCA's Project Pinpoint, roofs last around 17 years. In 1995, the R-value required was about R-15. It is conceivable that a roof installed in the late 1980s, early 1990s, is going to need reroofing soon. That means the existing roof insulation of R-10-15 increases to R-25 due to the new code. That means adding 2-1/2 – 3 in. of new insulation. The additional insulation means thicker perimeter wood nailers, raising HVAC units, access doors and hatches, skylights and windows to accommodate minimum flashing heights. Older buildings typically don't have the extra available flashing heights to accommodate that increase in insulation thickness.

CRCA believes building owners and managers will be shocked by the extra cost to install that much insulation. As a result, they may choose to not reroof, but rather patch continuously. This would negate the intent of the energy conservation code...to save energy.

Mark Graham reported key points from the new 2012 I-Codes (see page C 8).

Anyone can submit a code change proposal. CRCA is participating to affect change at the national level because building departments are deferring to the "nationally developed" code. Watch CRCA.org for reports on how we do at the Committee Action Hearings in May. ■

International Building Code Low Slope Roof Requirements

Fire Classifications – *Roof Assemblies shall be tested in accordance with ASTM E 108 or UL 790. Typically, a class C or B is acceptable by the I-Codes.*

Edge Metal Flashings – *... shall be designed and installed for wind load for resistance in accordance with ... ANSI/SPRI ES-1, Test Methods RE-1, 2, 3...with wind speed determined from Figure 1609A, B, C...* This means that even shop fabricated sheet metal must be test proven to resist the wind speeds as published.

Chicago's City Hall was the first high-profile vegetative roof.

Vegetative Roofs – In the last code development cycle several proposals from the National Association of State Fire Marshals (NASFM) brought new rules for roof gardens and landscaped roofs.

In Chapter 15, structural fire resistance for roofs topped with roof gardens shall be in accordance with table 601... reflecting the roof as possibly greater risk with this overburden and surfacing.

In the Fire Code, rooftop gardens are to be no larger than 15,625 sq ft, with max. dimension of 125 ft in length or width. A minimum 6-ft width of ASTM E 108 or UL 790 Class A Rated roof system shall separate adjacent roof gardens and separate combustible surfaces and the building perimeter.

Most important, the new I-Fire Code regulations require that *supplemental irrigation to maintain hydration levels to keep green roof plants alive and dry foliage to a minimum. Dead foliage shall be removed at regular intervals, no less than twice per year. The fire code official may require a maintenance plan for vegetation placed on roofs due to size, materials used, or fire hazard.* Plus, standpipes are now required to be extended to the roof level where the vegetative covered rooftop garden is located.

Rooftop Photovoltaic Panels – Energy harvesting of the rooftop continues with Photovoltaic Panels starting to be installed on rooftops. The NASFM also submitted proposals to develop code language regulating these rooftop accessories.

Fire classifications of panels need to meet testing required for the roof system. Wind resistance must also be demonstrated through testing of the system. Structural fire resistance refers the user back to Table 601. And, construction permits are required to install or modify a solar photovoltaic power system. Labels on the panels are also required on interior and exterior DC conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes and disconnects; "WARNING: PHOTOVOLTAIC POWER SOURCE". This helps the fire department identify PV systems disconnects and components obviously and intuitively during an emergency or fire event.

Roof Surface Reflectivity – The City of Chicago requires reflective roof surfaces to reduce rooftop temperatures in summer providing the City with Urban Heat Island Effect relief. Roof surfaces need to have a *reflectivity of either .72 new or .55 aged after 3 years.* Alternatively, *roof system weight of 15 lb/sq ft also meets the Chicago Energy Code under an exception.* Consult the 2009 Chicago Energy Code for complete details and applicability. The 2012 I-Codes do not require a reflectivity value in northern climates.

Another new requirement is *IECC Chapter 4's Air Barrier Requirement for the building envelope.* The good news is that to comply, many common materials qualify as air barriers. Built up roof, fully adhered single ply, modified bitumen materials all are listed by name in the code as air barriers. Consult the code for specifics.

Professional roofing workers understand the importance of protecting the roof and safety issues.

International Building Code Steep Slope

Ice Barriers in Reroofing – In Section 1510.3, a new 2012 exception for reroofing states...*where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane...* This allows contractors to leave the ice barrier membranes which do not come off and add another layer.

Photovoltaic Panels – *Residential structures shall be designed so that each array is no greater than 150 ft x 150 ft.* There is a lot more about roof shape and layout of panels to allow safe access to the roof for firefighters to cut into attics during firefighting operations. Refer to section 605 of the 2012 International Fire Code for complete information. ■

Thanks to NRCA's Mark Graham for this summary.

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