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## Roofing industry and technologies – economics are key

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Riser management has been a trend in the City of Chicago and more recently in the surrounding suburbs for approximately the past 20 years. Building owners/managers have incorporated riser management services into their building procedures as a way to effectively manage their building's telecommunication infrastructure and protect their tenants from unforeseen outages. Contracting with the right riser company will ensure that your building's telecommunication closets are well maintained and are up to "Code."

### Roofing industry and technologies – economics are key

By *Bill McHugh**Executive Director**Chicagoland Roofing Council (CRC)*

Economics. That's a big question for any industry, and roofing is no different. Chicagoland Roofing Council (CRC) members report that business is OK, but not near what it was in 2008 and 2009.

Chris Adler, CRC chairman, states, "With summer school work eating time due to collapsed deadlines, and rain into early July, the summer roofing season has been short, limiting production." Adler reports that fall will be challenging as the economic climate causes building owners and managers to put off roofing work and doing more maintenance.

Rod Petrick, CRC past chairman, mentioned that Chicago's roofing distributors report that few roofing contractors have work booked for the fall. "The 3<sup>rd</sup> and 4<sup>th</sup> quarter is going to be slow for roofing contractors. With the uncertainty of the stock market, major capital investments in roofs will be at arm's length right now"

Bruce Diederich, Chicago Roofing Contractors Association (CRCA) president says because of the economic turmoil, building owners and managers are making the decision to patch and maintain the roof rather than replace. "A monthly maintenance and repair program means approaching the roof from a different perspective now. Two years ago the decision by the building owner and manager would be to replace, but not now."

How does a building owner and manager get through this time, extend roof life, and create economical roof systems?

#### **Black roofs**

Black roofs are the easiest to make economical. On a 90° day, the black roof absorbs and holds heat with temperatures up to 170°. An obvious fix to reduce cooling loads would be to either coat the rooftop with a light color reflective coating, or adhere gravel or place ballast to a weight that complies with code for wind uplift, structural loading requirements as stated in current locally adopted building code and the building's construction documents.

Covering the roof membrane reduces the amount of UV light that beats on the roof membrane, adding life to the roof, and more value to the building owner and manager.

#### **New roofs**

Cold blasts away at roof surfaces, and heat beats down all summer. Rain adds thermal shock. Wind and snow challenge water integrity and structural systems all at once. Keeping things sustainable in this harsh environment is a challenge.

There are literally thousands of roof assemblies to choose from in the market. With many manufacturers of roofing membranes, insulation, fasteners, coatings, adhesives, and the surfacing options of gravel, ballast, photovoltaics, vegetation, and pavers, the choices seem endless.

Insulation can provide excellent payback, vegetative roof gardens keep excess water out of the drainage and water treatment system; while photovoltaics generate electricity, and reflective roofs provide lower rooftop temperatures in the summer. Building owners and managers need to be careful, though. Investment in insulation past R-20 may be met with diminishing returns. Economics again.

The 2009 Chicago Energy Code uses all these systems to reduce the Urban Heat Island Effect that arrives every summer. Summer heat raises the temperature of the city a few degrees above ambient, unnaturally. Reflective heat from surfaces — paving, roofs, windows — creates this Urban Heat Island Effect. Taming the Urban Heat Island effect with lighter colors reduces temperatures and the air around it ... reducing cooling load demands ... and demand for energy in buildings, then resulting power plants, which benefits cities. (Visit <http://www.chicagoroofing.org> for more information). Economical? For society, yes.

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### Vegetative roofs

The vegetative roof systems use materials that may be the same or very different than a conventional roof system. After the roofing membrane is installed, protection, drainage mats, and water retention systems are installed, in addition to insulation and roof membrane. ~~The roof system construction is very similar to a protected membrane roof system, used on many buildings throughout Chicago.~~ Economical? If installed properly, these roofs last a long time because they are hidden from UV.

### Roof surfacing reflectivity

The International Energy Conservation Code, 2009, does not require reflectivity for roof surfacing. Reflectivity of the roof surface in Chicago is limited to .72 initial *or* .50 after 3 years aging. Color choices for building owners include gray, silver, tan, and white systems. Economical? Lighter weight means less structural capacity, meaning eliminating tear offs in retrofit applications, and a cooler rooftop means less heat transfer.

### Gravel and ballasted roof surfacing systems

Gravel and ballast have been shown to provide reflective benefits according to studies by the U.S. Department of Energy. The studies reveal that mass provides energy efficiency and some reflectivity. Ballast or gravel also adds UV resistance.

By adding five lbs. to make 15 lbs./SF, these systems provide mass effect, pushing heat gain to later in the day, adds fire resistance to the rooftop, and cools the roof membrane. Economical? This shields the roof from harsh elements, extending roof life.

### Insulated roofs

One of the best economic paybacks is installing roof insulation. Both the International Energy Conservation Code (IECC) and Chicago Energy Code for low slope commercial roof insulation require a minimum average thermal resistance, or R, of R-20. This is a 43 percent jump in insulation from the 2000 IECC code that only required R-14, which has a big impact on the cost of a roof, and causes some sticker shock.

### Photovoltaics

Photovoltaic panels, mounted on roofs, or roof membrane-integrated, are so efficient that on sunny days a building owner or manager may be able to sell excess power back to the power company. With payback periods of 25 years and more, economics for these systems don't work if the roof has to be rebuilt. Make sure the roof can outlast the payback of the panels.

### Economics?

Whether it's the reflective roof surfacing, vegetative surfaced roof gardens, the ballasted roofs, or the many photovoltaics on roofs throughout the metropolitan area, a professional roofing contractor understands these complicated systems.

CRC's Petrick warns, "With the roofing market very competitive, more contractors bid projects outside their normal scope." This means building owners and managers need to pre-qualify contractors better. Qualifying questions include: Are the contractors licensed? The State of Illinois requires a roofing contractor firm be licensed. Are they classified for insurance as roofing contractors? Does the proposal meet local building and energy codes? What about references?

CRC's Adler suggests keeping buildings dry and extend the roof life with a solid roof maintenance program. "And, do it now, to beat big roof leak issues before the snow flies!"

*Bill McHugh is the Executive Director of the Chicagoland Roofing Council. You may visit their website at [www.chicagoroofing.com](http://www.chicagoroofing.com) For over 100 years, a coalition between the professional roofing contractor companies and Roofers Union Local 11 has been topping buildings in Chicago and the suburbs with sustainable, long life roofing systems and roof maintenance programs.*

Written by :



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