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White Roofs

Notebook
Promotions at Schuler Shook, Legat and more ■ Projects
by Murphy/Jahn, Pappageorge/Haymes, RBA and more

Calendar

Cover image: Rooftop of Oak Park Public Library
Photo by Linda Oyama Bryan
First Tuesday Happy Hour with Emerging Green Builders
Tues., April 3, 5:30 to 8:00 p.m.
Rock Bottom Brewery, 1 W. Grand Ave.
Sponsors: Young Architects Forum, Environment KC

Joining us this month is Emerging Green Builders, a network of students and young professionals who promote the integration of future leaders into the green building movement. Bring a friend!

ARE/LEED Study Hall
Tues. and Wed., April 3, 4 (6:00 to 9:00 p.m.), 24, 25 (5:30 p.m. to 9:00 p.m.)
Fitzgerald Earles Architects
1820 W. Hubbard St. #320
Sponsor: Young Architects Forum

AIA Chicago has purchased all available ARE and LEED study materials, and anyone preparing for the Architect Registration Examination is welcome. This month’s host is Maggie Rurek, Assoc. AIA.

Best Practices and Lessons Learned: Regulating Healthcare Design
Wed., April 11, 6:00 to 7:30 p.m.
Illinois Masonic Medical Center
836 W. Wellington entrance
Sponsor: Healthcare KC

What are the expectations for healthcare projects from the perspective of the IL Dept. of Public Health (IDPH) and the Illinois Health Facilities Planning Board? Learn what works best and what to avoid when collaborating with these agencies. Speakers: Enrique Unanue, AIA, IDPH; Henry Kowalenko, IDPH; Jeff Mark, Health Facilities Planning Board. Meet in Olson Auditorium. 1.5 LU/HSW

Professional Development Conference: Building Higher Performance
Thurs. and Fri., April 12-13
McCormick Place (South Building)

This year’s conference offers 15 sessions in three tracks: Moving Forward: Value; Measuring Success: Tools; and Our
The Color of Light

Thurs., April 19, 5:00 p.m.
check-in; 5:30 to 7:30 p.m. presentation
AIA Chicago
Sponsors: Illuminating Engineers Society
of North America/Chicago Section, AIA Chicago

What are CRI, CCT, Kelvin and SPD? Why do people dislike fluorescent light? How does lighting affect the color of the materials in your work space and in your projects? This two-hour discussion and hands-on presentation, organized by the Illuminating Engineers Society of North America, Chicago Section, will give you a much better understanding of these terms and how they relate to the real world. Presenters include Joe Tawil, GAM Products; Erik Moser, Oram Sylvania; and Avraham Mor, Lightswitch. Refreshments will be served. $15 for members of IES and AIA Chicago; $20 nonmembers. Visit www.ieschicago.org/programCalendar.shtml to register or call 847/487-4273 ext. 207. 2 LU/HSW

Air Barriers in the Building Enclosure: Permeable or Not?

Tues., April 24, registration 8:30 a.m.;
program 9:00 to 11:30 a.m.
Chicago Bar Association
321 S. Plymouth Court
Sponsors: Building Enclosure Council - Chicago, Technical Issues KC

One often-asked question when choosing the building envelope materials is the choice of vapor permeable or vapor non-permeable air barriers. The same question could and should be asked of any building envelope material. Vapor permeability is not required for air leakage control: either vapor permeable or vapor non-permeable materials can be equally effective as air barriers. However, vapor permeability is critical for moisture management, and understanding the design criteria for moisture management is critical when selecting a material. Attend this seminar and learn: building envelope components and their functions (control of heat, air, moisture); air barrier benefits and performance requirements; criteria for choosing a vapor permeable or vapor non-permeable air barrier; and introduction to condensation analysis tools (dew point, WUFI). Presenters: Maria Spinu, PhD, global building science integration manager, DuPont Building Innovations, and John Edgar, senior technical Service manager, Sto Corp.

Hands-On Masonry Restoration Workshop

Wed., April 25, 9:00 a.m. to 4:00 p.m.
1111 S. Western Ave.
Sponsors: Historic Resources and Technical Issues KCs, IMI, BAC Local 52

Explore failure mechanism; contributing factors; effects of deterioration graphed against time; levels and effects of intervention; and the inspection process, including how to classify repairs, sources of information, minimum inspection requirements, and documentation. Following the seminar, participate in terracotta repair and Jahn patching, tuckpointing, flashing and lintel replacement, concrete patching, and stone repair under the direction of IMI apprentice instructors and journeyman restoration craftworkers at the Tuckpointers Training Center on Western Ave. near Roosevelt Rd. Wear jeans and work boots. Lunch is included. Limit of 40 participants. 6 LU/HSW

Roofing Primer: Alternative Roofing Systems

Thurs., April 19, 12:00 to 1:00 p.m.
Chicago Bar Association
321 S. Plymouth Court
Sponsor: Technical Issues KC

Review the strengths and weaknesses of different roof systems, their strengths and weaknesses, and industry statistics concerning their performance characteristics. The speaker is Joanne Rodriguez from Tremco Roofing. (This program is rescheduled from January.) 1 LU/HSW

Introduction to ARE and Licensing in Illinois

Thurs., April 19, 6:00 to 8:00 p.m.
UIC Art and Architecture Laboratories
845 W. Harrison St., #1100
Sponsor: Young Architects Forum

Get ready for the Architect Registration Examination! Learn how to register, study for, and take the exam. Speakers: Erica Brown, AIA, NCARB; Luis Martinez, AIA, IL Architecture Licensing Board; and an architect who recently passed the exam. Frank Heitzman, AIA, will answer IDP questions, and Mike Newman will outline UIC’s ARE review class. 1.5 LU

Continued on page 7
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Managing Your Digital Practice with New AIA Contract Documents

Wed., April 25, 5:30 to 6:30 p.m.
AIA Chicago
Sponsor: Practice Management KC

To address rapidly evolving technology, AIA is about to release the first edition of two new documents that you may use to discuss and record rights and responsibilities regarding the transfer of digital data between the building team, as well as the project's digital requirements and protocols. Whether you are working in 2D, 3D, or 4D, fully integrating BIM, or just testing the waters, preview the documents and learn how you can use these new project management tools. Steve Weiss, FAIA (Weiss Architects) is a member of AIA’s Contract Documents Committee and will be presenting this program at the national AIA convention in May. 1 LU

New Members Breakfast

Mon., April 30, 7:45 to 9:00 a.m.
AIA Chicago

New members are invited to learn more about AIA at the local, state, and national levels, and to meet board members, KC leaders, and staff at our spring New Members Breakfast.

Did you know?

Beginning in 1904, the Chapter shared the club room at the Art Institute with the Municipal Art League of Chicago and the Chicago Society of Artists, representing the increased interaction between the architects and civic groups in the early twentieth century.

In 1905, member architect Normand S. Patton, introduced the subject of grouping Chicago’s municipal buildings. Daniel H. Burnham chaired a committee to study municipal architecture and comprehensive planning. These efforts evolved to become the Commercial Club’s highly influential Plan of Chicago by Burnham and Edward H. Bennett, endorsed by the Chicago Chapter and countless other municipal and civic groups.

Petersen Aluminum Corporation is pleased to introduce PAC-CLAD Cool Colors: a new and updated color palette designed to improve the energy saving performance of our metal roofing products without requiring compromise in color selection.

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Access to and use of the chapter office is one benefit that all members are encouraged to enjoy. I invite all members to stop by the new office and experience the results of the incorporation of member suggestions, and a creative and diligent project team that designed with LEED certification in mind.

Several events occur during National Architecture Week, April 8-14:
- Wednesday, April 11th - lecture by Ed Mazria, AIA, at the Art Institute;
- Thursday and Friday, April 12th - 13th - Professional Development Conference at McCormick Place;
- Friday evening, April 13th - Pre-view gala to the Chicago Modernism Show.

View the News Briefs and Programs sections for details about the PDC or go online at www.aiachiago.org.

The United States Olympic Committee is scheduled to announce their decision on April 14th. We are hopeful that Chicago will receive the United States' bid for the 2016 Olympic Games.

You still have time to register for the AIA 2007 National Convention and Design Expo, May 3-5, in San Antonio, Texas. Additionally, we encourage you to sign up to be a delegate at the convention. Please see the News Briefs section for details.

Laura Fisher

A message from Carol JH Yetken, ASLA, CYLA Design Associates, Inc.

Sustainable design is a new buzz that is very welcome. This movement encourages the design of buildings and sites that recognize the need to work with the natural order for the benefit of the people that use them and the sustenance of the land we live in.

For those of us who have been around since the 1970's and early 80's, many of these concepts are not as new as some people think. We can even learn a few things from our grandparents. Bioswales are not new; positioning buildings for best warming and cooling benefit is not new; even greenroofs are not new; capturing and recycling rainwater is not new. My grandmother used water that she collected from her roof to wash her laundry. Who hasn't enjoyed a cool summer drink under the shade of a big tree?

In typical 21st-century techno-fashion, we have defined, systematized, quantified, qualified, spread-sheeted and made alphabet-soup out of some simple concepts. Design professionals can get caught up in point chasing and lose sight of the bigger objectives. In creating sites that are more sustainable, we need to step back and remember that our goal is to promote a healthier and more sympathetic environment in as many ways as we can.

Open a window and feel the breeze.
Professional Development Conference

Register now to attend the Professional Development Conference at McCormick Place South on April 12 and 13. This year’s conference focuses on Building Higher Performance and offers topics such as: Integrating Daylighting and Artificial Lighting, Integrated Design from an MEP Perspective, Green Urban Design, and that is just until noon the first day. Also featured will be Partners: Preservation and Sustainability, Green Residences in Chicago, Managing LEED Projects, Financial Incentives for Green Design and more. Ed Mazria will open the conference with a talk about Architecture 2030: One year later, a look at how the building industry is responding to the challenge of green design and building. To see the complete schedule or to register online go to www.aiachicago.org.

Edward Mazria, AIA, will also give a public lecture on April 11 from 6 to 7:30 pm at the Rubloff auditorium of the Art Institute of Chicago. Mazria is senior principal at Mazria Inc., an architecture and planning firm in Santa Fe and founder of Architecture 2030 (www.architecture2030.org). This will be a special opportunity to learn about global warming and its relationship to the built environment. In 2006, the board of directors of The American Institute of Architects passed a resolution to support Architecture 2030, which states that by 2010, all new buildings should strive for a 60% reduction in fossil fuel use, and by 2030 all new buildings should be carbon neutral. (using no fossil fuel or greenhouse gas-emitting energy to operate). The U.S. Conference of Mayors also recently voted to unanimously approve the resolution.

Mr. Mazria is an internationally recognized architect who employs a cutting-edge environmental approach to design. He writes extensively and is the recipient of design awards from AIA, U.S. Dept. of Energy and American Solar Energy Society, and the American Planning Association. He currently speaks nationally and internationally on the subject of climate change and architecture.

The lecture takes place Wednesday, April 11, from 6:00 to 7:30 p.m., at the Rubloff Auditorium of The Art Institute of Chicago (use Columbus Dr. entrance; doors open at 5:40 p.m.). Cost is $20 ($10 for members of sponsoring organizations) and $5 students with valid student ID.

Continuing education credit: 1.5 LU/HSW


AIA Releases Documents on Demand

The AIA has released the AIA Documents on Demand eShop. It is a Web site that provides customers 24-hour access to the most popular AIA Contract Documents. This eShop allows customers to purchase individual documents and then print them immediately.

At the eShop, customers will be asked to provide limited project-specific information. They will then be able to print the documents and complete them as they would any paper document purchased from an AIA document distributor. The only tools needed are an Internet Browser (the AIA Web site supports Microsoft Internet Explorer and Mozilla Firefox). To purchase AIA Contract Documents from the Docs on Demand eShop: http://aiaadocsdemand.lhs.com

The following documents will be available on-demand:

- A101-1997, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum
- A201-1997, General Conditions of the Contract for Construction
- G701-2001, Change Order Instructions
- G701/CMa-1992, Change Order, Construction Manager-Adviser
- G702-1992, Application and Certificate for Payment
- G702/CMa-1992, Application and Certificate for Payment, Construction Manager-Adviser
- G703-1992, Continuation Sheet
- G704-2000, Certificate of Substantial Completion
- G706-1994, Contractor's Affidavit of Payment of Debts and Claims
- G706A-1994, Contractor's Affidavit of Release of Liens

15th National Conference on Building Commissioning

Building commissioning is increasingly recognized as a cost-effective process for optimizing building performance, reducing energy use and improving indoor air quality, occupant comfort and productivity. Conference attendees can expect an exceptional agenda with highlights including building-specific and advanced technical sessions, the latest on emerging tools and technologies, information on selling commissioning-related business and sponsors.

The conference takes place May 2-4, 2007 at the Sheraton Towers, Chicago. Cost is $350.00 for one day or $550 for two days. There is also a pre-conference workshop on May 1st. The topic is “Data Analysis and Diagnostic Tools for Commissioning: A Demonstration Workshop.” Cost for the pre-conference workshop is $350.00 or, attendees can pay $650.00 for full conference registration.

Register online at www.peci.org/ncbc.

A House for an Ecologist Exhibit at CAF

Co-sponsored by CAF, and AIA’s Committees on the Environment and Design, this exhibit showcases the winning entries for the national A House for an Ecologist competition. The competition sought designs for a live/work space for an ecologist in residence at the U.S. Fish & Wildlife Service.

The exhibit at the Chicago Architecture Foundation is free and open to the public and runs through May 5, 2007.
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Our Green Roofs

By Lee Bey

The Daley administration has taken giant steps in its bid to make Chicago the greenest city in the nation, a distinction that, if achieved, will be thanks in no small part to the green roofs adorning the tops of buildings great and small.

About three hundred green roofs have been built in Chicago or soon will be. The roofs run from simple vegetative surfaces atop residential high-rises to functional park-like spaces such as the 9,000-square-foot oasis atop the parking garage at Domain Lofts, 900 N. Kingsbury.

Even Wal-Mart has gotten into the act. A 74,000-square-foot green roof sits atop a new store on the city’s West Side. The roof’s performance will be compared with an exposed Energy Star roof on the other half of the building. The Notebaert Nature Museum in Lincoln Park was retrofitted with a green roof in 2003.

“The roof, this forgotten façade, is now being discovered,” said Department of Environment Commissioner Sadhu Johnston, whose agency administers and enforces the city’s sustainable design policies. “It’s a pretty ideal space to be utilized. More and more clients are pushing and asking for the architects and landscape architects to look at it.”

“The goal is a green roof on every building, not just new buildings,” Johnston said. “There are hundreds of acres in the city with abandoned [roof] space. The opportunity is there.”

Taking Cues

Chicago rooftop greening began in 2000 when a demonstration rooftop garden was built on the city’s side of the City Hall/County Building downtown. Mayor Richard M. Daley got the idea after seeing the dachbegrünnung, “green
roofs,” of Hamburg, Germany during a 1998 visit to that Chicago sister city. More than 90 percent of the commercial and residential roofs in Hamburg and other German cities are green, according to some estimates.

Germany had it figured out: green roofs make cities more livable by reducing heat island effect and cleansing the air of airborne particulates and CO2 emissions.

City Hall’s 20,000-square-foot roof was essentially an outdoor laboratory where green roof systems, vegetation and benefits could be tested as could the roof’s ability to reduce urban heat island effect and mitigate storm-water runoff.

In the warm weather months, the City Hall rooftop garden is a pleasant, park-like place with prairie grasses, perennials, shrubs and 20,000 herbaceous plants. The green surface can be 25- to 80-degrees cooler than a black tar roof during the summer, while keeping heat from escaping through the roof in the winter. City Hall says it saves $5,000 a year in utility costs thanks to the roof.

According to some estimates, a green roof can add four to ten percent to the price of construction, depending on what system is used, but there are offsets. Projects with planted roofs are expedited through the city’s building permit process, for instance. The Department of the Environment offers up to $5,000 in grant money through its Green Roof Grant program for residential and small commercial buildings. Last year, the City Council approved the pilot Green Roof Tax Increment Financing program. Dubbed the “GRIF TIF,” the program will offer matching funds of up to $100,000 to install green roofs on buildings within the Central Loop TIF district.

“They can cost more than a standard roof system,” said OWP/P Senior Associate and Director of Sustainability Rand K. Ekman, AIA, LEED AP. OWP/P’s green roof projects include the Skokie Public Library and Chicago Public Schools’ Tarkington Elementary School. “Some clients don’t understand the value unless there is a leg up provided by something like the Green Permit process.”

There are other potential savings. A green roof can double or triple the life of a roof’s membrane. And for buildings constructed on tight sites, a green roof’s ability to hold and slowly release rainwater can make it a cheaper, more efficient method of storm water management than a system of cisterns and pipes.

“You usually see a great commitment to the green roof in those cases because if they don’t do it, they have to mitigate storm-water in a way that costs them [more] money,” said Carol JH Yetken, ASLA LEED AP, a principal at CYLA Design Associates of Oak Park.

Yetken said her firm has four green roofs on the boards. One will be a nearly 30,000-square-foot green roof as part of an overall landscaping plan for the University of Chicago’s Jules and Gwen Knapp Center for Biomedical Discovery on a small site at 57th and Drexel. The building will cover 80 percent of its site, yet its large green roof and landscaped areas around the base will keep the site almost as permeable as it would be with no building at all.

“We have been able to hugely

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Our Green Roofs
Continued from page 13

increase the permeability of the site,” Yetken said.

But while the city's ordinances require building owners to consider green roofs, the job of converting those laws into attractive functional space, and getting a client through the permit process, falls to architects. Chicago architecture firm OWPP, for instance, designed its own demonstration rooftop on top of the firm's headquarters at 111 W. Washington.

“The idea is to have the ability to not only watch how they grow and work over the years, but to show a client that we’re not just speaking in theory,” said Ekman. “It is so much easier to visualize what’s in front of you.”

The demonstration projects, including those at the Chicago Center for Green Technology on the city's West Side, have gone a long way toward educating clients and designers on a technology that is still relatively new here. Among landscape architects and architects, green roofs are classified as extensive, semi-intensive or intensive.

An extensive roof is a lower-maintenance approach composed of low, hardy plantings such as sedums and herbs, placed in a mineral mixture, six inches or less, that can be partly composed of soil. The semi-intensive roof is a step up, requiring more care and often irrigation in exchange for bearing larger plants and shrubs. The rooftop garden at Domain Lofts, designed by Pappageorge/Haymes and landscape architect Wolff Clements, is semi-intensive.

The intensive green roof features more soil and can grow a wider variety due to up to 24-inch soil depths. A vegetable garden grows in two feet of soil on the intensive roof at the Comer Youth Center at 72nd and Ingleside, designed by John Ronan Architects and Peter Lindsay Schaudt Landscape Architecture.

To view the complete listing of plants for the OPPL, visit the AIA Chicago Web site and click on April Focus feature story.

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**ROOF GARDEN PLAN**

OAK PARK PUBLIC LIBRARY

CYLA DESIGN ASSOCIATES, INC.
June 2004
Yetken designed a 12,000-square-foot extensive, irrigated garden for the roof of the new Oak Park Public Library, completed in 2004. Plants such as bearberry, a native of the Lake Michigan dunes, died off because of the soil mixture and harsh winter. Thyme, on the other hand, performed well, as did the dianthus, a flowering perennial, Yetken said. The best performers were sedum and sempervivum (hens and chicks).

“It’s been through the severe drought and the wettest season in 100 years and survived and is still looking pretty good,” Yetken said.

A Growing Initiative

Chicago has 3 million square feet of planted rooftop space constructed or soon to be installed. This number excludes 1 million square feet in Millennium Park, billed as the world’s largest rooftop garden because it was constructed over rail line and parking garages. The 240,000 square feet of green atop the Soldier Field parking lots are also not included. And the initiative will continue to expand, including more single-family homes, offices, residential towers and previously-built structures, Johnston says.

One likely target is the acres of flat roofs on the office buildings surrounding O’Hare International Airport. Other countries have seized the opportunities that large commercial and industrial rooftops provide. An extensive two-acre roof, ablaze in bright yellow plantings graces the top of an airport parking garage in Zurich, Switzerland.

“If those buildings had green roofs on top of them, think how much more water would not go straight into the storm water retention; how much the temperatures would be reduced,” Yetken said of the O’Hare buildings. “And most of all, instead of a fingernail-on-a-chalkboard kind of eyesore, you would see this model green and just, generally, the whole aesthetic environment would be so much more improved.”

Smaller buildings are also getting in on the act. The new 50,000-square-foot headquarters for Access Living, an organization devoted to advocacy and social services for the disabled, at Chicago and LaSalle features a roof garden. The silver LEED-rated building was designed by LCM Architects. “It’s not a huge building, but a nice, attractive green roof they’ve done,” says Johnston.

Rand Ekman, AIA, of OWP/P envisions more hospitals installing green roofs and rooftop gardens that serve as places of respite.

“Having something soothing and visually-calming is an advantage to them,” Ekman said. “Most of our hospital clients are at least exploring that.”

Learn more about Chicago’s roofs at http://www.artic.edu/webspaces/greeninitiatives/greenroofs/main.htm.

Lee Bey is a Chicago writer, professor and consultant. The former Chicago Sun-Times architecture critic has also served as a senior architectural and urban planning advisor to Mayor Richard M. Daley and, most recently, as Director of Media and Governmental Affairs for the Chicago office of Skidmore Owings & Merrill. Bey teaches a course at UIC on the relationship between architecture and politics.

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White Roofs: Are They Sustainable?

By Helen J. Kessler, FAIA

We often hear that white roofs are more “sustainable” and cooler than dark colored, ballasted or aluminum-coated roofs. I have long been a proponent of white roofs, especially for hot cooling-dominated climates. Additionally, I have often said that the energy cost savings available to a building with a white roof are not large if the R-value of the roof insulation is above 25. The main reasons to install a white roof include urban heat island mitigation and possibly cooler intake air for roof top units and increased longevity for the roof.

Characteristics of White Roofs

The primary characteristics of most white roofs are their high reflectivity and high emissivity. (Emissivity is the measure of a material’s ability to release infrared radiation or heat.) The combination of high reflectivity and high emissivity means that the roof doesn’t warm up much above the ambient temperature even on the hottest sunniest days. It is often suggested that aluminum coatings are just as good as white for keeping a roof cool; however, metals have a very low emissivity. In other words, the small amount of heat that is absorbed by an aluminum coating isn’t easily released and will cause the aluminum roof to be warmer than the white roof.

The Re-examination of Roof Color

Discussions regarding roof color began in earnest during the energy crises in the 1970s when saving energy in buildings grew in importance and much research was done to understand passive approaches for solar heating and cooling. Lawrence Berkeley National Laboratory (LBNL) was in the forefront of this research and collected data and performed calculations on the effect of roofs on energy consumption.

In the mid-1990s, a heat wave in Chicago was implicated in the deaths of over 700 people. Architects and others sought to prevent such a tragedy from occurring again and the use of white roofs to reduce the urban heat island effect was re-examined. The urban heat island effect occurs in urban areas where, due to the thermal mass of the buildings, roads and parking lots, the ambient temperature rises higher during the day than in a rural or suburban environment and often stays higher at night due to the slow release of heat from those high mass materials.

Reflective Roofing Requirements

With these increasing concerns, a number of government entities, including California and Chicago, have provided incentives and/or mandates for cool, generally white, roofs. This was an especially controversial part of the Chicago Energy Conservation Code which became our standard in September 2002. Originally, the intent of the code was to mandate Energy Star roofs with the added requirement of an emissivity of 0.90. This would have required that new roofs with a slope of between 0:12 and 2:12 have a reflectivity of at least 0.65. The local roofing association lobbied against this part of the ordinance and the City changed it to require a minimum reflectivity of 0.25 through December 31, 2008 after which all roofs will need to meet the Energy Star minimum reflectivity requirement.

The U.S. Green Building Council’s LEED rating system gives a point for Sustainable Sites Credit 7.2, Heat Island Effect, Roof. Their intent is to reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat and reduce the formation and impact of smog. LEED gives buildings with flat roofs (slope less than or equal to 2:12) a point for use of a white roof with a reflectivity of at least 0.65 and emissivity of at least 0.9 (total Solar Reflectance Index (SRI) of at least 79). Steep-sloped roofs may have an SRI of 29 (see table at right).

Research Results

Both LBNL and Oak Ridge National Laboratory (ORNL), among others, have researched cool roofs. LBNL created a Heat Island Group and more information can be found at http://eetd.lbl.gov/heatisland/coolroofs/. ORNL has written several research papers with enlightening results. One is called: Field Performance of High-Reflectance Single-ply Membranes Exposed to Three Years of Weathering in Various U.S. Climates, August 2002, and the other is called Evaluating the Energy Performance of Ballasted Roof System - interim report, September 2007. These reports have concluded:

- The reflective benefit of a white roof is reduced over time if it is not cleaned.
- The energy efficiency benefits and roof membrane temperature of a ballasted roof appear to be similar to those of a white roof that has not been cleaned.
- A ballasted roof membrane stays warmer after the sun goes down than does a single ply roof.
- A black roof dramatically increases roof membrane temperatures, most likely increasing the urban heat island effect.
- Heavier (in weight) roof ballast
SRI Values for Typical Roofing Materials:

<table>
<thead>
<tr>
<th>Example SRI Values for Generic Roofing Materials</th>
<th>Solar Reflectance</th>
<th>Infrared Emittance</th>
<th>Temperature Rise</th>
<th>Solar Reflectance Index (SRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gray EPDM</td>
<td>0.23</td>
<td>0.87</td>
<td>68F</td>
<td>21</td>
</tr>
<tr>
<td>Gray Asphalt Shingle</td>
<td>0.22</td>
<td>0.91</td>
<td>67F</td>
<td>22</td>
</tr>
<tr>
<td>Unpainted Cement Tile</td>
<td>0.25</td>
<td>0.9</td>
<td>65F</td>
<td>25</td>
</tr>
<tr>
<td>White Granular Surface Bitumen</td>
<td>0.26</td>
<td>0.26</td>
<td>63F</td>
<td>28</td>
</tr>
<tr>
<td>Red Clay Tile</td>
<td>0.33</td>
<td>0.9</td>
<td>58F</td>
<td>36</td>
</tr>
<tr>
<td>Light Gravel on Built-up Roof</td>
<td>0.34</td>
<td>0.9</td>
<td>57F</td>
<td>37</td>
</tr>
<tr>
<td>Aluminum</td>
<td>0.61</td>
<td>0.25</td>
<td>48F</td>
<td>56</td>
</tr>
<tr>
<td>White-Coated Gravel on Built-up Roof</td>
<td>0.65</td>
<td>0.9</td>
<td>28F</td>
<td>79</td>
</tr>
<tr>
<td>White Coating on Metal Roof</td>
<td>0.67</td>
<td>0.85</td>
<td>28F</td>
<td>82</td>
</tr>
<tr>
<td>White EPDM</td>
<td>0.69</td>
<td>0.87</td>
<td>25F</td>
<td>84</td>
</tr>
<tr>
<td>White Cement Tile</td>
<td>0.73</td>
<td>0.9</td>
<td>21F</td>
<td>90</td>
</tr>
<tr>
<td>White Coating - 1 coat, 8 mils</td>
<td>0.8</td>
<td>0.91</td>
<td>14F</td>
<td>100</td>
</tr>
<tr>
<td>PVC White</td>
<td>0.83</td>
<td>0.92</td>
<td>11F</td>
<td>104</td>
</tr>
<tr>
<td>White Coating - 2 coats, 20 mils</td>
<td>0.85</td>
<td>0.91</td>
<td>9F</td>
<td>107</td>
</tr>
</tbody>
</table>

Values based on the Lawrence Berkeley National Laboratory Cool Roofing Materials Database. Please note that actual reflectivity and emissivity should be based on manufacturer data.

and pavers reduce roof membrane temperatures more than lighter roof ballast.

**Conclusions**

Choice of roof color should be viewed as one element of a roof system with all elements contributing toward a particular purpose. Generally, the purpose of a roof system is to protect a building from the elements and keep its inhabitants comfortable. A white roof, as well as other colored roofs, can do that. In any case, good insulation is critical to comfort and effective in lowering utility bills. Good insulation also has a far greater impact on energy cost savings than the color of the roof. However, for buildings without roof insulation, a white roof will have a significant positive effect on summer comfort during hot sunny days. If your project has a particularly large roof, it is especially beneficial to consider use of a cool roof to reduce the urban heat island effect.

**Additional Resources**

The Cool Roof Rating Council, www.coolroofs.org, is a non-profit organization dedicated to implementing and communicating fair, accurate and credible radiative energy performance rating systems for roof surfaces. They also support research and provide education. Their website lists the reflectivity and emissivity characteristics of many manufacturers' roofing systems.

The U.S. Environmental Protection Agency created the Energy Star Program, which provides solar reflectance levels of individual roof products to meet the Energy Star labeling requirements. Learn more at: http://www.energystar.gov/index.cfm?c=roof_prods.pr_roof_products.


This article provides an alternative perspective on many of the issues surrounding cool roofing.

Helen J. Kessler, FAIA, is Principal of HJ Kessler Associates, Inc. She has over 25 years experience in sustainable design, energy efficiency and renewable energy and is a nationally recognized LEED/LEED projects include the Exelon Headquarters Project, the Orland Park Police Headquarters, and the Jewish Reconstructionist Congregation in Evanston.
Schuler Shook is pleased to announce Mr. Jim Baney, IALD, LC, LEED AP, as the newest Partner in the firm. Jim joined Schuler Shook as a lighting designer in 1994 and was promoted to Principal in 2000. Jim’s 18 years of thoughtful lighting design experience make him a valuable member of the Schuler Shook team.

James McDonough, AIA, has been appointed Chief Operating Officer of Legat Architects. He will continue as principal in charge of the firm’s Crystal Lake studio and serve as director of the firm’s Education practice. Jeffrey Sronkoski, AIA, LEED AP, has been appointed Director of Higher Education of Legat Architects. He will also lead all business development and marketing efforts related to his sector. In addition to his new role, he will continue to serve as the firm’s Principal-in-Charge of Compliance.

Cynthia R. Mueller, AIA, has joined M+W Zander U.S. Operations, Inc. as Senior Designer in the Chicago office. Her wide range of experience in all phases of architectural practice with an emphasis on programming, master planning and design adds additional strength to the M+W Zander architecture group. Ms. Mueller has been the recipient of the Chicago Award from AIA Chicago.

Morgante Wilson Architects has a new office they have designed at 2834 Central St., Evanston IL 60201. Their phone number is 847/332-1001.

Harley Ellis Devereaux announces the addition of Edward Choklek as business development manager.

Thomas Chan, AIA, has joined the Afram Group. As the office’s Project Executive, he is responsible for staff management and overall supervision of office operations.

Environmental Systems Design is pleased to announce the launch of a new website at www.esdesign.com. The new site includes some new projects in Chicago and around the globe.
OKW Architects announced the hiring of Christopher Meigel as Senior Associate. He will serve as project manager for mixed-use development projects.

**PROJECTS**

Murphy/Jahn has two interesting projects at the University of Chicago. Construction has started on the University's West Combined Utility Plant and the South Campus Chiller Plant. The WCUP is immediately north of the University of Chicago Hospitals Medical Center and the Center for Biomedical Discovery, currently under construction. The designs of these buildings display technical equipment and its working in a celebratory way. Advancing a design strategy pioneered by the O'Hare International Airport Heating and Refrigeration Plant (C. F. Murphy Assocs. '61), the buildings' primary equipment is all brightly colored and visible from the street.

The firm also reports they have won a competition for an "Emblematic Tower" in Guangzhou, China. Leetop Plaza will be a transparent and energy efficient office tower, with a façade of glass shingles.

Pappageorge/Haymes is the architect for three new projects. One Museum Park East is part of Museum Park at Central Station’s multi-phased development. Soon to be the tallest new residential tower on Chicago’s lakefront, the project features a graphically scalloped design capped by a sculptural finned aluminum top. When complete in the spring of 2008, the building will have 289 luxury condominiums on 22 floors. Image on page 23.

The firm is also the architect for the $450 million Walton on the Park Development in the Gold Coast neighborhood. This two-tower project will be articulated using expressive, modern architectural language with floor-to-ceiling windows. Image on page 22.

Pappageorge/Haymes' project the Emerald is a mixed-use development under construction on the block bounded by Halsted, Monroe, Adams and Green Street. This project will include two 12-story condominium buildings. The buildings will share a spacious lobby that will house lounge and recreational spaces. The project will also include a retail center and bank along Halsted Street.

Ware Malcomb's Chicago office is proud to announce that design is completed and construction has begun for Buildings 3 and 4 in The Woods At Oak Grove Business Park. Panattoni Development Company of Rosemont, Illinois, developed this project on a 10.7 acre site located at 3210 N. Oak Grove Avenue in Waukegan, Illinois. The project includes planning and architectural design services for two warehouse buildings for lease.

*Continued on page 22*
Ross Barney Architects has completed design for the Commodore John Barry Elementary School in Philadelphia, PA. The site is bounded on all four sides by two-story brick row houses dating to the early 1900's. The goal was to provide a first rate academic facility on a tight urban site. To maximize outdoor play areas and neighborhood green space, a four-story school was designed. The design divides the school into three vertical zones. The base zone houses functional spaces including the lobby, cafeteria and administrative offices. The middle zone contains classrooms. The two-story Gymnasium occupies the center of the middle zone. The top of the school is a special learning center. Classrooms for arts and science and the instructional media center share outdoor decks that can be used for hands-on learning experiences. The exterior of the buildings is glass, glazed brick and metal wall panel. The school is designed for a LEED silver rating. Please see page 25 for an image of the school.

Lohan Anderson has been selected to design a new Grand Hyatt Hotel in Pune, India. It is a 5-star luxury hotel with 325 guest rooms including 25 suites, two ballrooms, fitness center, swimming pool, spa, business center and four restaurants. Additionally, Lohan Anderson will design a new 80,000-square meter I.T. Office complex in conjunction with the design of the Grand Hyatt.

Construction has been completed at the Huntley Municipal Complex designed by Legat Architects. The 52,000-square foot, multi-use facility positions a centrally-located board room between the Village Administration and Police Department wings. Please see page 25 for an image.

Legat Architects has been selected for the renovation of CTL Group’s 100,000-square foot corporate headquarters in Skokie, Illinois. The firm was also chosen to develop a conceptual design study for a new community building for the City of Warrenville, Illinois.

Joseph Gonzalez, AIA, design principal of Gonzalez Partners, has designed Metropolitan Park Apartments, a 24-unit affordable housing complex in Grand Rapids, Michigan. The design of the project acknowledges Governor Jennifer Granholm’s Michigan Cool Cities initiatives.

The Archeworks Papers Vol. 1 Number Four: Discussion and reception with author Annie Pedret, April 2, 2007 at 6:00 p.m. Join author Annie Pedret and Archeworks cofounders Eva Maddox and Stanley Tigerman, FAIA, for a discussion, reception and book signing. Copies of The Archeworks Papers will be available for purchase. Refreshments will be served.

On April 18, 2007 at 6:00 p.m., hear Stanley Tigerman and Victoria Lautman in conversation. Print and broadcast journalist Victoria Lautman will be interviewed by Archeworks cofounder and architect Stanley Tigerman. Visit www.archeworks.org or call 312.867.7254 for more information and to RSVP. Lectures are held at Archeworks, 625 North Kingsbury Street, Chicago, IL

On Wednesday April 18, 6 p.m., hear Charles Waldheim, Associate Dean and Director of the Landscape Architecture Program, University of Toronto, present his lecture on "Ford’s Fields" at IIT McCormick Tribune Campus Center, McCloska Auditorium, 3201 S. State St.. The lecture is free. Call 312/567.3279 for more information. Waldheim
is currently writing the first book-length history of Chicago’s O'Hare International Airport, Chicago O'Hare: A Natural and Cultural History (Chicago, University of Chicago Press, 2007). Recipient of the Rome Prize Fellowship from the American Academy in Rome and Research Fellow at the Canadian Centre for Architecture, he was elected Fellow of the Institute for Urban Design, and is an Honorary Member of the Ontario Association of Landscape Architects.

Join Brent Ryan, assistant professor of the University of Illinois Chicago’s Urban Planning and Policy Program and co-director of UIC’s Design Center, on Thursday, April 19 at 12:15 p.m. at the Chicago Cultural Center as he presents, “What is a Greystone?” His lecture examines the different aspects that define a greystone and its architectural elements. Ryan will also discuss the Historic Chicago Greystone Initiative in North Lawndale, which has nearly 2,000 greystones—more than any other Chicago community—as a tool to preserve the community’s cultural and architectural heritage. Question and answer sessions will follow each talk. The series takes place at the Chicago Cultural Center, 77 E. Randolph St., Claudia Cassidy Theater, Chicago, on the third Thursday of every month at 12:15 p.m. The public is invited to attend; you need not be a member to participate. Admission is free.

NEW MEMBERS

AIA

Sara Beardsley, AIA, Gilmore Franzen Architects; David Chicone, AIA, OWP/P Architects, Inc.; Robert Han, AIA, Han Archibald Design, Inc.; Tomone Iizuka, AIA, VOA Associates; Rod Kelly, AIA, Fitzgerald Associates Architects; Joseph King, AIA, Booth Hansen Associates; Patricia Mayle, AIA, Gensler; Kevin Montgomery, AIA, RTKL Associates, Inc.; Eugenia Savvakis, AIA, James Wild, AIA, Perkins & Will

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Professional Affiliate

Karen Swenk, Custom Building Products

Submit announcements to Alice Sinkevitch, Hon. AIA, at sinkievitch@aiachicago.org or AIA Chicago, 35 E. Wacker Dr., Suite 250, Chicago, IL 60601; 312/670-2422 (fax). High-resolution images are encouraged: call 312/670-7770 for details.

Continued on page 25
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**Commodore John Barry Elementary School** in Philadelphia, PA by Ross Barney Architects.

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**Huntley Municipal Complex** by Legat Architects.

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3 First Tuesday Happy Hour with Emerging Green Builders
Sponsors: Young Architects Forum, Environment KC
5:30 to 8:00 p.m.
Rock Bottom Brewery, 1 W. Grand Ave.

ARE/LEED Study Hall
Sponsor: Young Architects Forum
April 3, 4 (6:00 to 9:00 p.m.), 24, 25 (5:30 p.m. to 9:00 p.m.)
Fitzgerald Earles Architects
1820 W. Hubbard St. #320
This month’s host is Maggie Rurek, Assoc. AIA.

5 Design Exposed: Skidmore, Owings and Merrill
Sponsor: Design KC
6:00 to 7:30 p.m.
224 S Michigan Ave., 10th fl.

11 Chicago Harbor Plan
Sponsor: Regional & Urban Design KC
12:00 to 1:00 p.m
AIA Chicago

12 Professional Development Conference: Building Higher Performance
7:15 a.m. registration opens; 8:00 a.m. opening plenary; 10:30 a.m. breakout sessions, sessions run until 5:00 p.m. on the 12th and 3:00 p.m. on the 13th, McCormick Place (South Building)
Register online at www.aiachicago.org.

13 Roofing Primer: Alternative Roofing Systems
Sponsor: Technical Issues KC
12:00 to 1:00 p.m.
Chicago Bar Association, 321 S. Plymouth Court

14 The Color of Light
Sponsors: Illuminating Engineers Society of North America/Chicago Section, AIA Chicago
5:00 p.m. check-in; 5:30 to 7:30 p.m. presentation
AIA Chicago

19 Resuscitating a Dying World: The Architecture 2030 Challenge
6:00 to 7:30 p.m.
Art Institute of Chicago

24 Air Barriers in the Building Enclosure: Permeable or Not?
Sponsor: Building Enclosure Council - Chicago, Technical Issues KC
Registration 8:30 a.m.; program 9:00 to 11:30 a.m.
Chicago Bar Association, 321 S. Plymouth Court

25 Hands-On Masonry Restoration Workshop
Sponsors: Historic Resources and Technical Issues KCs, IMI, BAC Local 52
9:00 a.m. to 4:00 p.m.
IMI, 1111 S. Western Ave.
Managing Your Digital Practice with New AIA Contract Documents
Sponsor: Practice Management KC
5:30 to 6:30 p.m.
AIA Chicago

28 Hands-On House Help: Rebuilding Together - Metro Chicago
Sponsor: Young Architects Forum
7:00 a.m. to 4:00 p.m.; bus leaves from United Ctr.

30 New Members Breakfast
7:45 to 9:00 a.m.
AIA Chicago