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& MOISTURE MANAGEMENT MAGAZINE
The Magazine for Moisture Prevention and Remediation
May-June 2007
Volume 4 | Issue 3

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# The IR Wave

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Also inside:

## How Architects Design Mold-Free Hotels

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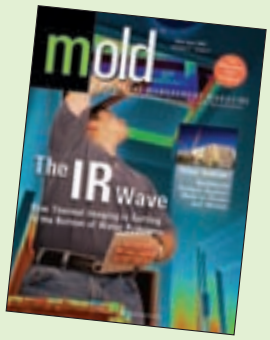
## On the cover

*Understanding the buttons on your infrared camera is one thing. Learning what the gradations in gray scale are telling you is another story. To learn more turn to page 24.*

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# Caring for the Sick

As I've worked on this current issue, the national headlines have been abuzz with the word mold. While it may not exactly be breaking news when this issue reaches your hands, as I write, the *Washington Post* has unveiled the decrepit conditions in Building 18 of the Walter Reed Army Medical Center, and several top army medical officers have been fired for their role in the negligence.

Sure, the attention is focused on getting to the root of the problem, and ensuring that the negligence that led to the shoddy conditions is not repeated. However, at some point, someone somewhere has to focus on fixing the immediate problem. One might hope that this focus on removing mold from the medical center might lead to questions about the best way to remove the mold growth and to prevent it from happening again.

No one can argue that the soldiers who have made sacrifices for this country don't deserve top-notch care. In fact, The Veteran Affairs department has called for a report on the quality of its 1,400 hospitals and clinics. And certainly Congress and the national media have placed the blame for the mold growth and other negligence squarely upon hospital officials rather than upon any construction flaw in the sick building itself. But in the meantime, other hospitals are suffering from construction problems that have led to mold growth.

For example, a March article in the *Los Angeles Times* discussed the need for mold remediation in the St. John's Regional Medical Center in Oxnard, Calif. The article reported that the 14-year-old hospital is awaiting extensive cleaning and reconstruction for as much as $87 million. Hospital officials are looking into fumigating the 230-bed facility in addition to replacing leaky showers, walls, windows and stucco exterior.

The hospital has been involved in litigation with contractors and remediation professionals for years. An attempt at repairing windows and leaky showers led to further problems, according to the article. Post remediation verification was allegedly incomplete, contributing to the recurrence of mold growth in the hospital, the *Times* reports. While the litigation continues, it is the patients who are likely to suffer.

While the human body is capable of amazing healing, the Center for Disease Control reminds us that "some people are sensitive to molds" and "immune-compromised people and people with chronic lung illnesses … may get serious infections in their lungs when they are exposed to mold." A clean environment helps promote a strong recovery.

It seems to me that the mold industry can do its part to repair the mistakes made in the Walter Reed Army Medical Center, and other hospitals, by raising awareness that mold is a problem that can be prevented through proper construction and regular maintenance, and by continuing to raise the quality of the remediation industry. m

Megan Headley
Editor, **Moldmag**

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# Letting Your Association Work for You

## Using Associations to Advance Your Company

**Rich Walker** is president and chief executive officer of the American Architectural Manufacturers Association. Mr. Walker's opinions are solely his own and not necessarily those of this magazine.

As AAMA celebrates its 70th anniversary, we are moved to reflect on what it takes for an association to achieve such longevity. It's no mystery: it translates into staying ahead of the curve in providing meaningful services to members.

From a member's point of view, what are these services that balance the cost-benefit equation? How can association membership and active participation make it easier for your company to stay apprised of industry issues and remain influential in directing the industry's future?

The ROI of association membership boils down to how well it keeps members informed of potential threats and opportunities, and how effectively it addresses them. For today's fenestration industry, some of these issues include:

- **Hurricane-resistant products.** In the aftermath of devastating hurricane seasons, the focus of hurricane-resistant performance of windows changed from wind loading to impact strength and water penetration resistance. To ensure more reliable door and window performance in the most extreme wind-driven rain conditions, testing is being evaluated by AAMA to assist in the development of a voluntary standard specification that includes a permissible level of water penetration during these extreme events.
- **Installation practices.** Proper installation is a key factor in whether fenestration products will perform as designed to resist air and water leakage. Clearly, proper sealing and integration of the door or window into the drainage plane of the wall are critical in preventing wall cavity leakage that may give rise to mold. AAMA pioneered the InstallationMasters™ installer training and certification program to meet the challenge of effective installation. The program teaches best practices to be used in the absence of manufacturer's installation instructions.

> "It's an ever-changing landscape that must be addressed in a timely manner if the building industry is to meet today's escalating challenges."

Other examples of services an association can provide include:

- **Up-to-date performance standards that reflect evolving technology and new materials.** Bottom line for the industry: the ability to compare performance capabilities for a range of products means more design options for architects and builders—and assurance that products are evaluated on a level playing field.
- **Widely-recognized third-party product certification services.** This provides end-users with a means to determine tested product performance and code requirement compliance through tools such as certification labels and directories of certified products. AAMA launched the original certification program for the air, water and structural performance of doors and windows 45 years ago—a program that has grown into the largest in the industry with more than 250 manufacturer licensees representing more than 400 plant locations.
- **Connecting with buying influences.** Though various associations will employ differing methods of providing this service, at AAMA, a renewed emphasis on effective marketing, with increased participation by member marketing representatives, has led to, among other things, the imminent launch of a comprehensive, high-profile certification branding and promotional campaign with targeted messages and tools that individual manufacturers can integrate with their existing marketing materials.
- **Liaison with other organizations.** Activities of other groups often affect an individual's business, but actively participating in all industry organizations can be a daunting task. A proactive association provides members with an avenue to stay informed of these groups' activities and their potential impacts. Ideally, it represents the individual in responding when necessary to defuse or diminish potential threats. AAMA maintains active cooperative initiatives with a host of stakeholder groups, such as ASTM, IGMA, AMD, AIA and many others.

As these examples illustrate, it's an ever-changing landscape that must be addressed in a timely manner if the building industry is to meet today's escalating challenges. An effective trade association provides a primary opportunity for the owner or chief executive officer of an individual company to have his or her voice heard in developing strategies to meet them. AAMA knows the importance of providing a forum for those voices—and the value of listening. m

# Why choose the Foster product solution?


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# Controlling Moisture in Wall Assemblies

## A Guide to Selecting the Right Product

**Michael Coulton** is the director of new product development for Benjamin Obdyke Inc. in Horsham, Pa. Mr. Coulton's opinions are solely his own and not necessarily those of this magazine.

Moisture management systems can be a potent weapon against mold and mildew buildup behind residential sidewalls. Persuading clients to invest in such protection requires a thorough understanding of the performance characteristics of each product type—and the climate in which it will be used.

Increasingly, architects and high-end builders view moisture management solutions—such as water-resistive barriers, housewraps and rainscreen systems—not merely as "nice-to-have" extras, but as essential elements of well-protected residential wall systems. Building professionals are specifying such products to protect residential wall assemblies from the potential effects of mold damage, especially in areas that experience heavy, wind-driven rain or high temperatures and humidity.

Even in climates with average or little rainfall, architects and builders who wish to optimize wall drying and drainage are turning to moisture management systems as insurance against callbacks, remediation and/or litigation. They also can help builders comply with growing rules for using water-resistive barriers behind certain facades.

Despite their obvious benefits, however, architects may still find it challenging to convince their clients that building envelope products are worth the added investment. In fact, many architects and builders may be confused themselves by the bewildering array of moisture management systems available, and unsure as to when and where to use each solution. To compound the problem, the building industry uses terms like rainscreen and housewrap interchangeably, when they play distinctly different roles. And, at present, there are few standards-based methods to help professionals evaluate these products.

A recent study commissioned by our company Benjamin Obdyke Inc., found that the most important drivers in selecting the right moisture management system are the amounts of rainfall and wind-driven rain where the home will be built, as well as the choice of siding, because each type of cladding responds differently to moisture.

**Several factors can determine the choice of wall assembly system for keeping water out of a residential project, including the project's location and the cladding material used.**

### Water-Resistive Barriers

Water-resistive barriers are part of an exterior wall system, designed to prevent air and water from entering the stud wall cavity from the outside. They perform like a shell for buildings—liquid water that has penetrated the exterior finish does not pass through, yet water vapor from the interior can escape so that the framing and wall cavity can dry. There are three basic types:

- **Building Paper**: a paper sheet or felt material coated or impregnated with asphalt to increase its strength and water resistance; primarily used as a drainage barrier.
- **Housewraps:** engineered plastic sheet membranes designed to resist the movement of water on the outside, but also allow water vapor to pass through the building envelope.
- **Drainable Housewraps:** also engineered plastic membranes, these products offer the features of housewraps or building papers but also include a drainage system to promote bulk water through channels engineered into the sheet. They are designed to maintain a more constant drain rate than basic water-resistive barriers.

## Rainscreens

The laws of physics state that moisture will always seek a drier plane. Thus, even with a drainable housewrap, water may still seep through crevices in exterior cladding into interior assemblies, especially in regions prone to heavy rainfall, high temperatures and humidity—and even in climates that receive low or average rainfall.

A rainscreen wall system creates a pressure-equalized air space immediately behind cladding, in conjunction with a water-resistive barrier. The ¼- to ¾-inch air space helps neutralize the forces that draw water into the assembly. Any water that does enter the wall is allowed to enter and exit through an opening at the bottom of the wall. Rainscreens also provide ventilation drying of any residual moisture from the back side of the cladding.

There are two ways to construct a rainscreen system airspace—nailing wood furring strips over wall studs after applying a building paper or housewrap or using "void space" products that feature a three-dimensional plastic matrix to create a vented continuous rainscreen. Architects and builders can choose from a plastic matrix applied directly over a water-resistive barrier or bonded products that combine the plastic matrix with a water-resistive barrier.

## Selecting the Right Product for the Job

Product performance, however, is only one variable in selecting the right moisture management system. According to building experts, rain is the single most important factor to control in promoting sidewall

*continued on page 11*

# DRYWALL IS A MAJOR PORTION OF ANY BUILDING. SHOULDN'T IT BE MOISTURE AND MOLD RESISTANT?

Traditional drywall has paper on both sides. And mold eats paper. So insist on DensArmor Plus® paperless drywall instead. Its ingenious glass-mat facings resist moisture and mold better than regular paper-faced drywall. Plus, DensArmor Plus offers a three-month exposure warranty against moisture damage during construction. And it has superior fire and abuse resistance when compared to regular paper-faced drywall. All of which helps preserve your long-term investment. To learn more, visit www.densarmorplus.com.

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durability. As a result, the main rule of thumb in choosing a product is to first determine the amount of rain control needed.

For extremely wet and/or humid climates, coastal areas and hilltop exposures receiving high (40 to 60 inches annually) or extreme (60 inches or more annually) rainfall, a rainscreen assembly is generally the best solution. Building experts advise using a rainscreen system for areas that experience high winds in addition to rain, as wind-driven rain frequently manages to penetrate small openings in cladding.

In climates that experience moderate rainfall (20 to 40 inches annually), protection against rain penetration should include a drainable housewrap. And in areas of low rainfall (less than 20 inches annually), a housewrap or building paper should offer sufficient water resistance.

### Cladding Choice is a Factor, Too

In selecting a moisture management solution, architects and builders also must consider the cladding choice. Some exterior claddings are more moisture absorbent than others, and therefore could benefit from drainable housewraps or rainscreen systems.

As the state of building science progresses, more standards will be developed to assist professionals in the decision-making process. But in the meantime, armed with the knowledge of the roles and performance characteristics of rainscreen systems and the distinct types of water-resistive barriers, architects and home builders are in a better position to make the right choice. m

## Guidelines For Best Building Practices

| Siding Material | Building Envelope Protection Option | Reason |
|---|---|---|
| Wood cladding | Rainscreen system | All woods are highly susceptible to moisture penetration and absorption and require air space protection. |
| Stucco or stone masonry | Rainscreen system or drainable housewrap | Porous stucco and stone absorbs water and therefore benefit from air space protection. Drainable housewrap may suffice in certain dry climates, but not all enhanced housewraps optimize drying; over time, small cracks will appear in stucco, requiring water drainage behind cladding. |
| Cement fiber | Rainscreen system or drainable housewrap | Less susceptible to moisture infiltration and absorption than wood, but can trap water like stucco (see Stucco above). |
| Vinyl siding | Housewrap or building paper | Non-absorbent, does not trap water, low potential for rot. Good-performing building paper or housewrap is recommended to optimize long-term performance. |
| Brick | Rainscreen system automatically created | Nature of brick construction creates sufficient moisture protection and air movement; however, water seepage is possible if air cavity is not continuously maintained. |

***Source: Benjamin Obdyke***

COMPANY NEWS

### GREENGUARD Offers 10 Tips to Construct a Mold-Free Building

GREENGUARD Environmental Institute (GEI), a non-profit organization that establishes indoor air standards for indoor products, environments and buildings, offers builders and contractors 10 precautions they can take to avoid mold contamination of their properties. These precautions comprise the GEI Mold Protection Program™, a compilation of best practices that GEI developed and has proposed as an American National Standards Institute standard. Building consultancies review and assess properties based on the standard; once this is successfully completed, property owners can apply to GEI for certification under the GREENGUARD Mold Protection Program. Once a property is certified, it can be promoted to lenders, insurers and prospective tenants.

The precautions include:

- **Site Assessment:** The site must undergo both a soil/hydrology review and assessment and a landscape architecture review and assessment. A registered civil engineer should be hired for the first job and a registered landscape architect should be hired for the second. One must particularly make sure water does not settle near the building's proposed foundation.
- **Building Envelope Review:** An independent third party should assess the strength of the building's roof, wall assembly and foundation.
- **HVAC:** A load analysis, equipment selection review, control systems check, layout and materials section review are all necessary.
- **Plumbing:** Moisture and condensation must be managed and taken into account in conjunction with any design issues. The size, design and use of the building must be matched appropriately to its plumbing system. A qualified third party should review these specifications.
- **Materials:** Any potentially moisture-sensitive materials should be identified during the initial design and then shipped, packaged, stored and installed appropriately so as to shield them from elements.
- **Final Design/Construction Documents Approval:** The final design, which includes moisture and mold prevention measures, must be approved by the building owner/developer's representative.
- **Construction Verification:** The construction site and ongoing building must be inspected by a qualified third party at least once every three months. These inspections include all materials deemed moisture sensitive; ensuring they are not installed prior to the building being sealed or, at least, temporarily covered.

ASSOCIATIONS

## ASHRAE Receives EPA Grant to Provide IAQ Guidance

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) received a $510,000 grant from the U.S. Environmental Protection Agency (EPA) to provide guidance for designing and building healthier buildings with effective operation and maintenance programs that reduce exposure to toxins and asthma/allergy triggers. The three-year grant will be used to write the *Advanced Indoor Air Quality (IAQ) Design Guide for Non-Residential Buildings*, which will help professionals implement high-performance designs, improve indoor air quality performance, increase energy efficiency and decrease the environmental impact of exposure to air toxins in a broad range of non-residential buildings.

The grant is part of some $4 million awarded by EPA to improve indoor air quality. ASHRAE will collaborate with the U.S. Green Building Council, the American Institute of Architects and other organizations that address indoor air quality.

"Through the guide and an associated education effort, ASHRAE will improve the long-term environmental health for building occupants by reducing their exposure to air toxins and increased productivity due to greater comfort and health of building occupants," says Terry Townsend, P.E., ASHRAE president. "The project addresses the EPA's priority areas of indoor air pollutants, which include asthma triggers such as dust mites, pests, mold and air toxins."

"We are thrilled to be working with ASHRAE on the *Advanced IAQ Design Guide*," says Eric Werling, EPA project officer. "This guide will fill a critical information need for the building industry, and ASHRAE has the experience and reputation to deliver a top-notch project."

The guide will facilitate the design process so that advanced practice can be accomplished within the constraints of typical construction and design fees. It is expected to be published in late 2008, with an ASHRAE professional development seminar based on the guide available in late 2009.

**www.ashrae.org**

- **Operations and Maintenance Training Plans:** Building and maintenance personnel should be trained in preventing, spotting and reporting moisture incidents.
- **Acceptance:** An authorized third party should formally inspect the property to ensure it meets overall requirements. This onsite inspection includes all appliances, pipes, drains and other areas where condensation occurs. The certification can then be obtained.
- **Ongoing Inspections:** The property should be inspected at least four times during the first year of occupancy and on an ongoing basis in the following years.

**www.greenguard.org**

ONLINE

### CorrosionConnection.com Helps Battle Corrosion, Rust, Mold and Mildew

A new website has been created to help everyday home, auto and boat owners discover how to prevent and solve problems with corrosion, rust, mold and mildew. At www.CorrosionConnection.com consumers can find information on products and services in the same place.

The site is geared towards everyday consumers, and is divided into three easy-to-use sections, which cover the interior and exterior of homes, RV's, motorcycles, boats and more. Each section is broken down into categories that offer information on preventing and solving corrosion problems and also offer products and services for that category.

Site creator Ed Aster developed the site after searching for solutions to prevent the effects of corrosion on his home, cars and boat.

**www.CorrosionConnection.com**



## BRIEFLY ...

**Americrawl South Inc.** of Martinsville, Ind., launched a new website at www.americrawlsouth.com to detail the services it offers to homeowners, including moisture control, mold and mildew control, basement and crawlspace drainage systems, crawlspace encapsulation system, structural wood repair, insulation, crawlspace conditioning, soil excavation and more ... Atlanta-based **Sto Corp.** completed a year-and-a-half project to upgrade and automate its dry production process at its Atlanta plant location. The new systems features material preparation and transporting, PLC controlled precision material weighing technology and material high speed packaging including UltraSonic Bag sealing.

## BARRIERS AND MEMBRANES

### Ultra-Shield™ Defends Basements from Moisture

Ultra-Shield WB commercial and residential waterproofing system from GMX in Cleveland forms a

tough, flexible membrane shield for use below grade on exterior foundation walls. The water-based, polymer-modified coating was developed for spray application. It provides a durable finish that can bridge shrinkage cracks.

The membrane can be applied by spraying on poured walls immediately after forms are removed. On block surfaces, the product can be applied as soon as the mortar is dry. It is compatible with a wide range of insulation, drainage or protection course materials.

➡ **www.gmxco.com**

### Valéron's Commercial Barrier Makes The Grade

Houston-based Valéron Strength Films' Valéron Vortec™ EVD™ drainage barrier product is now available in a commercial-grade version. The new product has not only the specially engineered surface to facilitate drainage, but also significantly higher mechanical properties to support the heavy-duty commercial construction environment.

Wrapped under a building's exterior facade, Valéron Vortec EVD protects against water infiltration by providing a multi-directional drainage pattern, moving moisture away from the wall cavity. The

three-dimensional surface creates an airspace to allow drainage while also providing significant tear-resistance, which is 33 percent stronger than standard Valéron Vortec EVD.

➡ **www.valeronvortec.com**

### NOFP Introduces MicroLT

Northwestern Ohio Foam Products (NOFP) of Wauseon, Ohio, introduces MicroLT, a high-performance reflective foil radiant barrier and vapor retarder designed to reflect radiant energy and retard moisture migration in a building. The product's core is made of flexi-

## WeatherTex™ Combines Paper and Plastic

Fortifiber Building Systems Group® in Reno, Nev., introduces WeatherTex™, a hybrid housewrap that layers Super JumboTex® 60 Minute building paper over WeatherSmart™, the company's "smart" polymeric housewrap.


Manufactured from a base stock of kraft linerboard, JumboTex is less brittle than felt, making it less likely to tear during installations around corners and in tight conditions. WeatherSmart is a nonwoven, non-perforated housewrap that employs breathable polymer technology and delivers balanced moisture control in any weather condition. By combining the products, WeatherTex offers strength, durability, breathability and moisture protection, with the added benefit of versatility. It is backed by the FortiShield® 10-year warranty.

➡ **www.fortifiber.com**

ble 2-ply ⅛-inch thick polypropylene foam. The core has pure aluminum foil film laminated to both sides; the films provide the high reflectance radiant barrier properties and vapor retarding performance specifications.

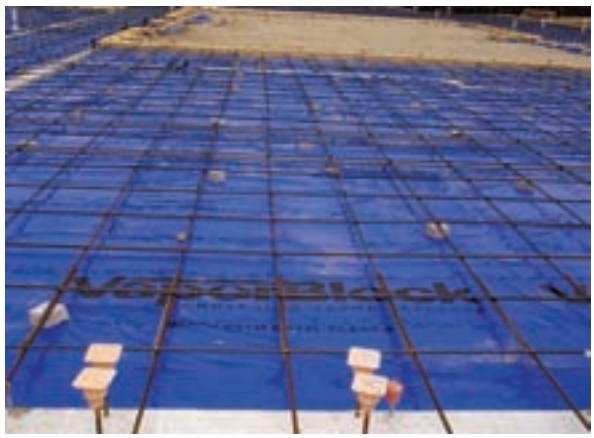
**www.nofp.com**

### Take a Look Through Rufco-Wrap

Raven Industries in Sioux Falls, S.D., says its Rufco-Wrap housewrap stops or retards inward moisture migration caused by the sun. The housewrap has a perm rating of 6.5. It is made from three layers of cross-laminated Valeron film for tear resistance and holding power. A translucent design allows users to see through it to the material below for quick and easy installation. The cross-laminated Valeron strength film seals cracks and seams in exterior sheathing, protecting insulation's R-value.

The company also offers a high-performance underslab vapor retarder to prevent moisture migration through concrete slabs-on-grade or concrete walls. Vapor Block is made from polyethylene resins that exceed ASTM E-1745. The underslab retarder features high tensile strength and puncture resistance, low moisture vapor permeability and resistance to decay.

**www.ravenind.com**



COATINGS

### Fosshield® Fabrics Combat the Growth of Microbes

Foss Manufacturing Co. LLC, based in Hampton, N.H., introduced its Fosshield® antimicrobial technology for protection from mold in textile products.

The bicomponent polyester fiber includes a silver- and copper-based, inorganic antimicrobial additive in the outer layer. When woven-in, Fosshield combats the growth of microbes, extending product life and maintaining a hygienically clean surface.

The additive in Fosshield is extruded as part of the fiber sheath during manufacture, so that it will not wear or wash off.

**www.fosshield.com**

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WOOD PRODUCTS

## FrameGuard® Mold-Resistant Wood Gets GREENGUARD Certified

Atlanta-based Arch Wood Protection Inc. announced that its FrameGuard mold-resistant wood has met the emissions standards of the GREENGUARD Environmental Institute and is now GREENGUARD Indoor Air Quality Certified®.

FrameGuard wood is coated with a blend of proprietary anti-mold and borate chemicals that provide resistance to mold growth and protect wood against damage from termites and fungal decay in interior applications. The factory-applied coating is effective on lumber, plywood, OSB, SIPs, trusses and engineered wood.

**www.frameguardwood.com**

continued

### EPA Approves Antimicrobial Coating

Caliwel™, a non-toxic, natural mineral-based, antimicrobial surface coating from New York City-based Alistagen Corp., received U.S. retail market clearance from the Environmental Protection Agency (EPA).

The product's BNA technology, which uses calcium hydroxide in a micro-encapsulated formulation, kills most airborne microbes soon after they come in contact with the treated surface. The encapsulation process allows the coating to resist degradation for up to six years while maintaining its antimicrobial surface. Caliwel is available as a pigmented liquid coating that can be applied to walls, floors and other hard surfaces.


www.alistagen.com

### Coating Shields Buildings From Mold

EnviroShield USA in Corona, Calif., offers a two-part water-based coating for protection from mold. According to information from the company, the epoxy does not attempt to block water vapor totally but allows approximately 10 percent to pass through, thereby reducing the vapor pressure on the coating. The product features an antimicrobial additive that will not leach due to the controlled water vapor transmission.

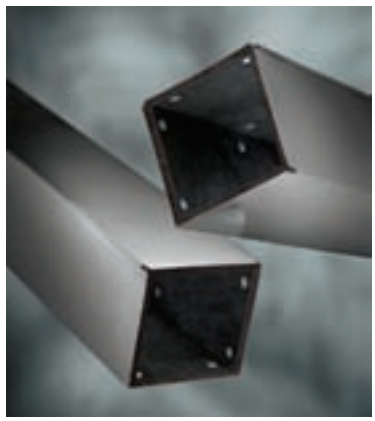
The company says the coating can be applied to damp surfaces, and works best on concrete and cement when applied to a damp surface.

www.enviroshield-usa.com

## DUCTS

### CertainTeed Toughens Up

Duct liner just got tougher, with the introduction of ToughGard® MAX duct liner from CertainTeed Corp. in Valley Forge, Pa. The new liner utilizes InsulSafe, the company's blowing insulation, to help create a product with high durability, moisture resistance and cleanability. In addition, it features an EPA-registered antimicrobial agent for added protection.



The product's surface resists tearing, puncturing and wear during installation and maintenance. It also features an enhanced R-value and high acoustical values. A black fiberglass mat allows for easy finishing and clean-looking installations.

www.certainteed.com

## GYPSUM

### Caraustar Faces Mold-Resistance

SafeFace MR™, from Caraustar Industries Inc. in Austell, Ga., is a new mold-, mildew- and moisture-resistant product for the wallboard industry. Wallboard made with SafeFace MR has application and finishing characteristics that are the same as regular wallboard, with no extra finishing time or cost. It can be manufactured in all regular and specialty gypsum facing paper grades, including creamface and grayback for interior drywall applications, shaftliner, sheathing, tile-backer and pre-deck products.

When tested in accordance with ASTM D3273 protocol, wallboard made with SafeFace MR has achieved ratings of 10, the highest level of performance for mold resistance.

www.caraustar.com

## SERVICES

### AQS Shares Its Plan

Air Quality Sciences (AQS) in Marietta, Ga., offers a comprehensive Moisture Management Plan that leads to GREENGUARD Certification of the building.

AQS is a fully integrated indoor air quality company, and a test laboratory and technical lead for the GREENGUARD Environmental Institute (GEI).

Through the new plan, moisture management services are provided during the design, construction and occupancy phases of new construction. These include document reviews, on-site inspections, mold and moisture mapping, building clearance testing, training of staff and implementation of continued mold prevention processes.

The Moisture Management Plan can be used to earn the GREENGUARD Mold Protection Certification™. This credential from GEI certifies that best practices were used throughout design, construction and occupancy phases to safeguard against damage and loss caused by mold. These best practices have been consolidated into a national, voluntary standard by GEI, an ANSI-authorized standards developer.

www.aqs.com

## USG Introduces MOLD TOUGH Gypsum Panels

Chicago-based USG introduces SHEETROCK® brand MOLD TOUGH™ gypsum panels, the first patented wallboard that actively inhibits mold growth on the surface paper, both back and front, and in the gypsum core, according to the company. Utilizing a proprietary technology, ingredients are added during the manufacturing process to protect the wallboard from moisture and mold.

SHEETROCK MOLD TOUGH gypsum panels score a 10 (on a scale of 0 to 10) for mold resistance under ASTM D3273 guidelines. In addition, they score and snap quickly, finish easily and require no special installation procedures.

The new panels are designed specifically for use in interior areas. They will replace the company's HUMITEK® gypsum panels and SHEETROCK brand gypsum panels.

**www.usg.com**

HVAC COMPONENTS

## CC750 Controls Excess Moisture

ICM Controls Corp. in Cicero, N.Y., launched its CC750 Comfort Control Center, a field programmable variable frequency/variable voltage fan motor speed control that works with an existing single-phase air conditioner or heat pump to lower and control humidity levels in the home or office.

The CC750 can slow down a system's fan speed, allowing the connected A/C or heat pump to efficiently remove moisture from the air. It also allows the indoor air quality devices on an advanced A/C or heat pump system to operate more effectively. The resulting dry air allows set temperatures to be adjusted higher for energy savings, while experiencing the same perception of comfort.

**www.icmcontrols.com** m

### ILLINOIS: School Suit Begins Again With 29 New Plaintiffs

Following a judge's order to allow 29 new plaintiffs to the case, a school district in St. Charles, Ill., restarted a mold lawsuit that has already lasted nearly six years. According to a February article in the *Daily Herald*, claims by Lindsey Scharpenter, a former student of St. Charles Unit District 303, of chronic sinus and respiratory pain had been upheld by the court. That led to a host of new plaintiffs, some of whom had been removed from the original 2001 lawsuit. The district was originally sued for failing to address environmental concerns.

According to the article, many of the original plaintiffs' claims had been refused when they could not prove their illnesses were attributable to mold. The current plaintiffs are all former students of the school, and suffer from a variety of illnesses.

The *Herald* reports that this lawsuit is not officially a class-action, and because each student suffers from different symptoms, and attended the school at different times, each case will have to be researched individually.

**A lawsuit in St. Charles, Ill., has begun again, with 29 new students suing the district for illnesses attributed to the mold growth allegedly ignored by the school.**

Complaints of respiratory problems, fatigue and other illnesses attributed to the building began in 1997. Mold testing was performed in 1999 and 2000, according to the article. In 2001, the school was closed for a $28 million mold remediation.

## TEXAS: Home Destroyed First By Mold, Then By Arson

A home in Frisco, Texas, that had been the subject of several mold-related lawsuits became the victim of arson in January, according to *The Dallas Morning News*. Fire officials found accelerant poured in a playroom caused the fire that destroyed the already decaying house.

According to the article, the value of the house dropped from about $254,000 the year before mold was found to $3,495 the year after—while the value of the two-acre lot steadily grew.

Owners Nikki Carmody and Dell James moved out of the house after discovering mold in 2001. The couple sued the company that installed an air-conditioning unit in 2000, as well as an air-conditioning repair firm. While the suit continued, local homeowners logged complaints with the city about the property due to the dilapidated nature of the abandoned house.

**A house abandoned after mold was discovered had been the subject of neighbors' complaints until a fire, ruled to be deliberate, destroyed the home entirely.**

According to the article, a code enforcement officer asked the homeowners in December about the future of the house and was told it was set to be demolished in January, with a new house built on the lot. However, the fire marshal told the paper that the homeowners never applied for a permit for demolition.

### CALIFORNIA: Flood Victims Seek Recompense From County

More than 260 individuals and businesses in Marin County, Calif., have sued local government agencies for more than $1 billion in damages as a result of a December 2005 flood. Each plaintiff is seeking $4 million for damages, plus $250,000 in legal fees; lawyers are expecting to recoup more than $66 million in fees, according to an article in the January 2007 *Marin Independent Journal*.

Flooding from the storm reportedly damaged about 1,200 homes and 200 businesses. According to the article, residents filed the first lawsuit against the city in the fall of 2006 for its failure to have installed measures to prevent the flooding.

Lawrence Mann, one of the attor-

neys representing the plaintiffs, told the *Journal* that his goal is to win the maximum allowed by each party's insurance policy so the settlement does not affect municipal budgets. Mann also told the paper that some of his clients hope to direct part of the proceeds toward preventing future floods.

### HAWAII: Hotel Buyer and Seller Battle Over Construction Defects

The Wyland Waikiki Resort and Spa in Honolulu, Hawaii, has been closed indefinitely for building defects, including significant water damage, sparking yet another lawsuit. According to an article in the *Honolulu Star Bulletin*, the latest lawsuit over the property managed by Hilton Hotels was filed by the property seller, eRealty Fund LLC, and its buyer, Lodging Capital Partners LLC, over breach of contracts.

The new suit was filed March 2 by Lodging Capital, and claims that when eRealty sold the hotel last July—for about $94 million—the company concealed the hotel's construction defects.

The article reports that eRealty Construction was renovating the hotel when the sale closed. However, the suit alleges that the company used unlicensed workers to perform the work, and that the renovations were not properly designed and constructed. A suit filed in February by business entities formed by eRealty alleges that Lodging Capital didn't allow the seller to correct any of the defects. eRealty also alleges that it is owed money held back from the purchase price for the cost of post-closing construction and renovations, according to the article.

Lodging Capital told the paper that the company has completed the hotel's extensive mold remediation and aims to resume operation shortly.

## MICHIGAN: Builder Settles on Leaky Roof

**Builder A&T Development Inc. settled a lawsuit over a leaky roof after one day of testimony on a family's fight with mold.**

Tom and Kimberly Szymczak were awarded a consent judgment of $775,000 against builder Andrew Tonkovich and his company, A&T Development Inc., for constructing a poorly built roof that allowed rain to leak into the family's new home, according to an article in *The Detroit News.* According to the article, the family lived in the new $375,000 home near Howell, Mich., for only ten months before mold growth forced them out.

The first leaks started six days after the family moved in, Szymczak told the paper. The builder hired a contractor to fix the roof, but the leaks continued shortly thereafter. Following further attempts at reconstruction, a mold remediation firm was brought in to treat mold discovered growing in the walls. The couple attributed their multiple cases of pneumonia to the mold growth, according to the paper. During the remediation and reconstruction, the couple lived in a local Holiday Inn for about five months.

According to the article, the developer agreed to the settlement one day after testimony in the case was heard.

**Lodging Capital Partners LLC alleges that the Hawaii hotel it purchased for $94 million came with more than a view—mold and more construction defects to address.**

# Preventing Mold Problems in Hotels

**Megan Headley** is the editor of Moldmag.

The nonresidential construction market is expected to increase by almost seven percent in 2007, following the growth of near six percent in 2006, according to the American Institute of Architects' (AIA) semi-annual Consensus Construction Forecast. AIA is predicting the strongest growth—about 13 percent—in hotel construction.

"Over the last three years there's been a huge increase in hotel construction nationwide," says David

# How Architects Can Design Mold-Free Hotels

Odom, a principal of Liberty Building Diagnostics Group in Orlando, Fla. "For example, Hilton Hotels is opening an average of one hotel a day during 2007. It's unbelievable."

With the rapid construction of such large buildings, one single design flaw could potentially pose a problem—in hotels across the world.


"The process is sort of unique with the hotel industry," Odom says. "They will come up with a prototype and then they will just replicate that prototype a hundred times and they will do it in very quick periods of time, in a few years. So then the problem with the design of the prototype gets replicated a hundred times."

Odom adds that he has noticed an increase in the number of "niche" hotels being produced, particularly four and five star hotels. As one example, he cites an impending chain based on the classic Waldorf Astoria in New York. The hotel's patrons will be expecting the best. If mold appears, it could pose a major problem.

"People are much more concerned about mold odors and mold problems in a $400 a night room than they are in a $40 a night room," Odom says.

With the potential for increased hotel design and construction, architects and engineers have the opportunity to perfect designs for dry buildings—or the possibility of repeating design problems in chains across the country.

## The Hotel Industry Cries Out

Odom says that the hotel industry has plenty of reason to be concerned about potential mold problems.

"If you look back over the last ten years by far some of the largest moisture and mold problems, by cost, have been in hotels," says Odom. "Without question." He adds, "There was a real building boom in hotels in the late 1990s and many hotels were having moisture problems and a number went into multi-million dollar moisture problems."

Bill Garcia, associate principal with TVS Architects in Atlanta, provides oversight of his company's hospitality projects. Garcia agrees that mold prevention is a focus for the hotel industry. Garcia says he hasn't faced any mold problems in a hotel he has helped design. "We've been fairly fortunate in what we've been doing appears to be working," he says.

Tom Horn, manager of quality control, and Rick Bartels, CEI, manager of quality assurance, quality control and post construction services, both of Perini Building Co., have seen the hotel industry's concern with water intrusion. They say that for the hotel industry, the preventative cost of eliminating mold and water leakage far outweigh the ramifications of water intrusion after a project is built. Mold equates to a loss of revenue.

"There's a lot of concern in the industry as a whole about mitigating, preventing mold and mildew," says Garcia. "It's residential construction and also has a huge assembly component to it, so you're dealing with a significant number of occupants."

Garcia adds that he hears concern about preventing water intrusion not only from his hotel clients, but also from contractors and project managers involved on those jobs.

Harry M. Neill, CIH, vice president of 1Source Safety and Health Inc. in Exton, Pa., sees what happens when there is a problem somewhere in the design or the construction of an architect's vision. He says that when he hears concerns about water intrusion prevention, it

*continued on page 22*

# Architects' Mold Concerns continued

is from "those companies, architects and engineers, who have been through the problem."

### Designing For A Mold-Free Stay

With the hotel industry coming face to face with mold problems—and the loss of revenue and public relations nightmares that can lead to—designers who focus on hospitality projects are learning some of the key components that can prevent these devastating problems.

"We try to develop wall systems that are appropriate for the climate," Garcia says. "What's appropriate in cold climates is not appropriate in hot, humid climates. We get the vapor barrier in the right position, consult with engineers … we typically have a waterproofing consultant in the decision."

Neill agrees that, from his experience, developing an appropriate wall system is a big step toward preventing future water intrusion problems.

"[We recommend] on the design side that they look at appropriate vapor barriers and proper pressure relationships in the building," he says.

Horn and Bartels add that the entire exterior can provide reason for concern, with potential for leaks into faulty exterior cladding, roofs and curtainwall. These experts say that anything built below-grade—from parking garages to offices—poses a design risk.

Like almost any structure, hotels are subject to problems in the building envelope leading to water intrusion. But there's another problem that Neill says he often sees occur specifically in hotels.

"Aside from the obvious liquid flow, leaks—which can be flashing or roof issues—one of the major things we see is a hotel or motel being under negative pressure," he says.

Neill explains how negative air pressure created in hotels and motels can lead to mold growth.

"If you look at the design of a hotel, you have a lot of bathroom exhausts, you may have a laundry exhaust," he says. "If the amount of exhaust air is not made up with make-up air, you have a lot of negative pressure."

Essentially, Neill says, this draws hot, humid air in through the wall assemblies. In many hotels, that humid air travels through the wall cavity before it is stopped by an unintentional vapor retarder: vinyl wallpaper.

"If you have vinyl wallpaper, that [hot, humid air] gets trapped," Neill said.

The humid air then condenses upon the air-conditioned interior wall and begins to promote the growth of mold.

"It's a combination of building envelope and mechanical issues," Neill says. He adds that it is an issue that can "absolutely" be prevented in the design stage.

The experts at Perini note that hotels and resorts have more humid areas within than other structures.

# AIA Annual Convention Approaches


The American Institute of Architects is holding its Annual Convention and Design Exposition May 3-5 in San Antonio, Texas. San Antonio is a city that combines hotels and water in a very positive way with its famous Riverwalk. Scenic views of this famous portion of the meandering San Antonio River are only steps away from the Henry B. Gonzalez Convention Center, where architects and design professionals will gather to learn about the latest new products and industry trends.

### Show Hours

**Thursday, May 3**
9:30 a.m. – 5 p.m.
**Friday, May 4**
9:30 a.m. – 5 p.m.
**Saturday, May 5**
9:30 a.m. – 2 p.m.

### Seminars to See

**Thursday, 10:30 – 11:30 a.m.**
The Role of Air- and Water-Resistive Barriers in Cavity Wall Construction
**Thursday, 6 – 7 p.m.**
Cracked! Problems and Solutions with Concrete and Masonry
**Friday, 8:15 – 9:45 a.m.**
High Performance Envelope Design

**Many hotels are built in humid climates and feature pools, saunas, steam rooms and other intentionally damp areas.**

These places can cause problems if not properly ventilated, including bathrooms, saunas, steam rooms, interior swimming pools, kitchens, water features and even planters.

Odom agrees that some of these problems can be prevented in the design stage, although he sees envelope problems often stemming from construction issues.

"If I had to oversimplify it … I would say most HVAC problems, most air conditioning, dehumidification problems, are mainly design issues, and most rainwater intrusion issues are construction issues," Odom says. He cautions, "Now that's vastly oversimplifying it. But I would say that's been my impression over the years."

## Finding The Problem—And The Fix

Horn and Bartels note that there is never a time after-hours when hotel management can let in mold remediators without alarming guests. Hotels are always open and run 24 hours a day, seven days a week. In Las Vegas, for example, where properties never close, hotels and resorts simply can't afford problems relating to mold and water intrusion.

In residential and office buildings, investigations into mold problems may often be the result of a health complaint from the occupants. However, in hotels, the complaints from the transient guests are generally not health-related.

"It's not a concern strictly driven by health," Odom says. He says concerns are more driven by aesthetic problems.

Training maintenance staff to recognize mold problems could help prevent significant problems. When building owners are alerted to the problem and the cause is located, that can be a real wake-up call to designers.

Neill adds that simple solutions noted in the design stage can mean averting extensive payouts in remediation and reconstruction.

"It seems too simple [to architects] to recommend looking at vapor pressure areas," says Neill. "But when these problems occur, particularly behind the vinyl wall covering, it can be extensive."

Odom recommends that to prevent these design issues, architects consider peer reviewed design processes.

Horn and Bartels agree, saying that Perini recommends involving a third-party consultant to review design and work closely with the general contractor and owner. The company makes it a practice to hire third-party consultants to check the exterior and all below-grade construction. Consultants are also hired to test and monitor all interior water features—all planters, sinks, swimming pools, etc., are filled with water and monitored for 24 hours. Kitchens and all plumbing are also tested.

Odom offers his advice on what the peer review should address.

"I believe the best peer review is one that doesn't just look at the building envelope and rainwater intrusion, it's one that looks at the building envelope for rainwater intrusion, vapor diffusion and air infiltration," Odom says. "So it's really looking at the three sources of moisture. It also looks at the second component, which is an HVAC peer review."

He adds that it is still a very underused tool.

"There's no question it's underused, but there are some barriers to its use," he says.

The first barrier, Odom says, is that in the design phase, architects aren't expecting a problem.

"I don't believe in the stage of the project where a peer review would be most likely used, which is in the design stage, anybody is sitting back and anticipating two or three years down the road multimillion dollar moisture problems," he says.

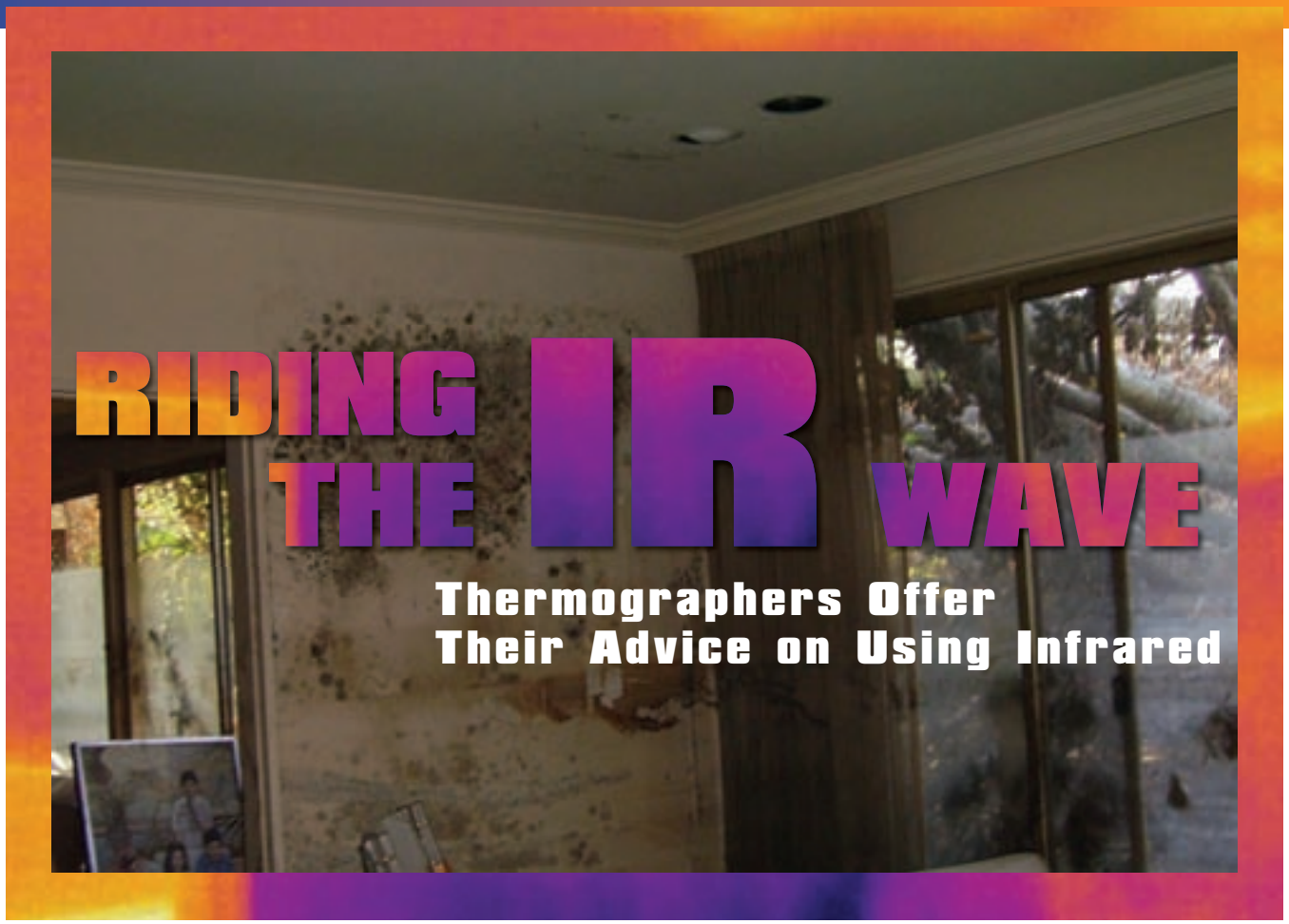
Another barrier he sees is that peer review is not currently common practice.

"'If I haven't done it for the last 15 years why do I need to do it now?'" he says. "'I hired a great designer, I hired a wonderful contractor, we've got a good construction manager, why do I really need to have that peer review document?'"

Another problem Odom recognizes is that the process also adds cost to the project. However, he says clients should take the potential costs of repairing a problem into consideration. He says that his company refuses to participate in bids for peer review.

Horn and Bartels report that they have heard of some cases of significant losses in the industry that have ended up costing those involved as much to eliminate the mold problem as it did to build the original hotel.

"Even if you go to the most expensive peer reviewer, it's cheap by any standard of what it will save you," Odom says.



# RIDING THE IR WAVE

## Thermographers Offer Their Advice on Using Infrared

**Megan Headley** is the editor of Moldmag.

Did your mother ever tell you when you were a kid that you had to eat your carrots so that you'd have good eyesight when you grew up? Urban legends aside, professionals in the mold and moisture industry have been clamoring toward a tool that's providing an extra strong set of eyes—because these eyes "see" infrared (IR) waves and can pinpoint water damage quickly.

"Thermography is the use of an IR measuring instrument, such as an IR camera, to detect and measure the thermal energy emitting from an object," according to information from Boston-based Flir Systems.

Thermal imaging devices can point professionals in the direction of a moisture intrusion problem by allowing technicians to see the temperature of a surface, as well as areas of dissimilar temperatures that might indicate a problem.

"The great thing about the [IR] camera is that, with the proper training, you can walk in, quickly shoot a building and determine where you have problems with the building envelope—in terms of potential leaks, air gaps and that sort of thing. It's not invasive. In other words, you don't have to tear anything apart. And, the technology has become easier to use and much more affordable than ever before," says Larry Wilson, public relations manager with Fluke Corp. of Everett, Wash.

"It allows you to do in a matter of an hour what used to take days to do with a moisture meter," says Louis Relle, CMRS, co-owner of Relle Thermal Imaging LLC of Gretna, La. "It is just an excellent tool."

### Seeing Red

These days, most professionals who pick up a thermal imager for the first time know that the gradation of gray or blend of bold color indicates the temperature differences on the surface of the object at which they're looking. But it's one thing to look, and another to understand what those subtle shading differences mean.

"The first thing people need to do is understand the technology, what it's going to show them and what it's not going to show them," says Wilson.

"When you're doing thermal imaging you have to establish contrast between one area and another so that you can pick up the differences in temperature," says Relle.

"You need to find a thermal anomaly," adds Scott Wood, primary instructor/consultant for the Building Science Institute (BSI) of Fremont, Calif. "It's pattern recognition."

"Because moisture reacts more slowly to a change in temperature than the building material—that can show an anomaly," says Relle.

"What it [the imager] will do is determine if there are thermal variants," says Wilson.

Wood notes that as long as evaporation is occurring, there is an approximately 4° Centigrade variation between the water and the nearby building materials.

Lew Harriman, cofounder of Moisture Detection and Measurement of Portsmouth, N.H., makes the distinction between indoor investigations and exterior envelope investigations. "That's just day and night," he says.

"Indoor water damage problems are extremely simple because, in almost 99.9 percent of the cases, water is evaporating," says Harriman. "That means the areas that are most moist are darker, they're cooler."

For exterior investigations, the time of day can make a difference in the investigation.

"Morning and evening tend to work best," says Relle. That's because the contrast is greater when the day is beginning to warm up—when water spots remain cool—or the night is cooling off—and moisture is holding onto the day's heat.

"At some point in the day it all tends to blend out," adds Relle.

"You're not necessarily looking for cool spots, you might be looking for warm spots," Wilson reminds users.

Wilson uses a roof as an example.

"If you run out first thing in the morning to shoot that roof you would be looking for cooler areas because that water has set overnight," he says. "If you went out after a thermal load in the evening, then you would look for warm spots, because water absorbs heat."

## Supporting Roles

If there's no difference in temperature, there's no anomaly to find. Similarly, if a material is completely wet, thermal imaging won't pick it up, notes John Edgar, CIH, MSPH, MS, CMC, of Relle Thermal Imaging.

Edgar recalls a case he investigated after Hurricane Ivan, in which the hurricane had blown off a building's decorative roofing. Water had poured under the concrete deck until it was completely saturated.

"We looked at a half dozen roofs, and had no thermal imaging anomalies. Everything appeared to be the same temperature—and it was," he says.

Using thermal imaging only, investigators were unable to pinpoint the problem because there were no differences in temperature.

"When you're looking at high-rise buildings, if you base the investigation solely on thermal imaging you can make mistakes," says Edgar.

That's a key point on which these experts agree: thermal imagers act as a screening tool that can point an investigator in the right direction—but it has to be backed up with concrete numbers.

*continued on page 26*

Photo courtesy of Fluke Corp.

**Although thermal imagers can point investigators toward the right direction, experts caution that another tool should always be used to confirm the findings of the thermal image.**

## Questions to Ask Before Buying

**Cost?** Include in your calculations the cost of the thermal imaging tool, any accessories you may need and training—and watch out for hidden costs.

**Resolution?** Is the image you're getting vivid enough for the application for which you'll be using the tool?

**Color or black and white?** Decide whether gray scale or color is more appropriate for the applications for which you'll be using the tool.

**Durability?** Many infrared cameras feature hard cases that can withstand being on the jobsite.

**Software?** Is it required—and is it included in the purchase of the thermal imaging tool?

**Training?** Will the manufacturer provide training on your new thermal imaging tool, or information on pursuing training courses?

**Ease of use?** The experts agree that picking up a camera and getting a feel for it is a big clue toward finding the right tool. And if you won't be using it on a daily basis, it should be simple enough that you don't have to pick up the instruction manual before every investigation.

# RIDING THE IR WAVE

"You look for the anomalies and then you go back it up with other moisture meters, etc.," says Relle. "If we're going to say absolutely this is wet or this is not, we always back it up with [another tool]."

"You have to have … more than one moisture meter because you have many things you're trying to measure," says Harriman.

Edgar adds that when the thermal imager is used in conjunction with a digital camera, the documentation can be invaluable—particularly if the findings are called into the courtroom.

"If you see something that's on the side of a building or on a wall, you can take that picture. Then you go back and verify with a moisture meter, and take a digital picture," says Edgar.

Harriman recalls explaining the use of an IR camera, and the importance of supporting tools, to his colleague David Governo, a partner in Governo Law Firm LLC. Following the explanation, Harriman saw Governo nod in appreciation. "I understand," he said. "The camera indicts, the meter convicts."

**The kitchen north ceiling furdown area seemed fine …**

## These Waves "Bounce Off Me and Stick On You"

These thermographers point out another tricky complication of which new users need to be aware. With some materials, the temperature the thermal imagers show might actually be a reflection from something else.

"People using a camera for the first time [must] remember those surface temperature patterns are not just emissions, they're also reflections from other surfaces," says Harriman.

"If you're standing next to a window shooting something, you could be getting the reflection," says Wilson.

"If you're shooting a mirror and you're standing in front of it you'll see the temperature of your body," elaborates Michelle Relle, co-owner of Relle Thermal Imaging.

"Ceramic floors are a little quirky too," says Louis Relle. "They aren't quite as bad as a mirror, but you have to look at the anomaly out of the grout."

> "You look for the anomalies and then you go back it up with other moisture meters, etc. If we're going to say absolutely this is wet or this is not, we always back it up."
>
> —Louis Relle, Relle Thermal Imaging LLC

It's not just the surfaces people typically think of as reflective that can be problems. Surfaces that don't normally act as a mirror become reflective to IR waves, Harriman explains.

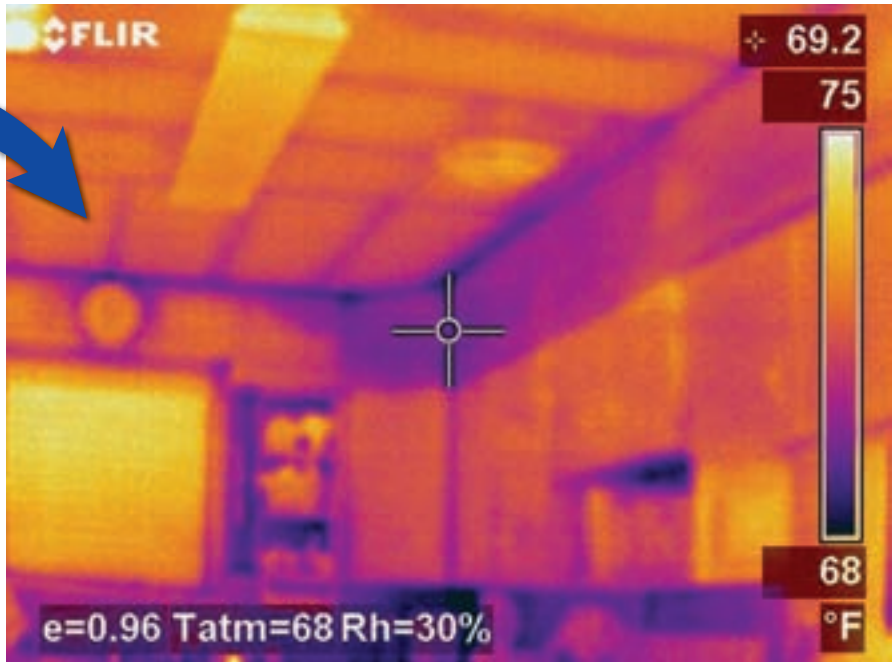
A discussion on *Identification and Suppression of Thermal Reflections in Infrared Thermal Imaging* by M. Vollmer, S. Henke, D. Karstädt, K.-P. Möllmann and F. Pinno of the University of Applied Sciences in Brandenburg, Germany, presented at the 2004 InfraMation conference, discusses this potential problem:

"Thermal reflections are a common source of problems in interpreting infrared thermal images. In particular, atomically smooth surfaces like glass, metals, or wet surfaces, and also brick and concrete, may easily give rise to reflections of infrared radiation from often uncared sources. If unnoticed, these thermal reflections may give rise to misinterpretations of the object temperature."

The writers further observe that objects can be "a poor mirror in the visible, but a good mirror in the infrared. This behavior is due to the relation of surface roughness versus wavelength of the radiation."

"There are a lot of little subtle things that will affect what the thermographer is viewing on the camera," says Wood.

Edgar advises that, "The thermal image is not what determines what's going on, it's really the




**... until the IR camera revealed the ceiling and furdown was wet from roof leaks.**

expertise of the investigator."

Building that expertise takes training and plenty of practice.

## Taking Off the X-Ray Vision Glasses

While thermal imagers can be powerful tools, there are some misconceptions among new users about what this tool can accomplish.

"People have to keep in mind … that IR cameras show surface temperature patterns and they show nothing else. If you forget that—and it's so easy to forget because it kind of doesn't look like that—then you get distracted into, 'Gee I want a better camera that will see deeper into the wall,'" says Harriman.

"They think it is an x-ray, and it's actually seeing into the wall cavity," says Louis Relle. "Really, you are truly just measuring the surface temperature. That is an absolute misconception that people have."

"Most building materials are not IR windows, and you're only looking at surface temperatures," adds Wood.

Louis Relle recalled a training exercise done at a hotel. His staff was walking through the hotel with the IR cameras, searching for evidence of moisture intrusion—until hotel management began to complain.

"They had people freaking out, asking, 'Are they looking through the walls into my hotel rooms?'" says Louis Relle.

Wood adds another misconception—he says that his truly 'green' students expect their camera to do all the work.

"Some of them want to know what button to push to tell where the water is. It's not a single button—you can't just turn it on autopilot. You have to tune the image," says Wood.

## So Who Is Riding the IR Wave?

Thermal imagers have definitely become the "in" tool for the mold industry. Rarely does a trade show go by without a seminar on the topic—no matter what the show, because it's a tool that spans a number of industries and numerous applications.

"Thermal imaging goes across all markets—it can be used for electrical work, water damage, building diagnostics, etc.," says Wilson. "It's a fairly broad market."

Wood sees individuals with a broad variety of backgrounds attending his training sessions at BSI. He sees professionals "from the restoration firm with a minimal amount of technology, but who want to document moisture," ranging to the "high-end building investigators who are looking for construction defects, building design problems, flashing issues and where they're using the tool as an additional view of the building."

He also sees some degree of crossover in the fields for which his students use thermography.

"You have people who have 20 or 30 years of thermography experience … but they don't know anything on building sciences," says Wood.

"I end up talking to two types of customers: water damage restoration people and building investigators," says Harriman. "I make a distinction between those two even though there's a lot of overlap."

He explains that the type of thermal imagers these customers need vary greatly.

Water damage professionals, he explains, are generally looking to get "the biggest bang for the buck" because they may be investing in more than one IR camera.

"Water damage people really need few features," Harriman says. "They need something that's really tough and has a lot of battery life."

He adds that in the last three years, he's seen an increase in the number of water damage professionals investing in IR technology.

Building investigators, Harriman finds, are dealing with more com-

*continued on page 28*

# RIDING THE IR WAVE

plex problems than the water damage professionals, and "tend to want the most complex camera possible." He says that while these investigators generally do need the highest resolution available, no one should purchase an IR camera that's overly complex, especially if they won't be using the tool on a daily basis.

One thing the pros agree on is that the number of possible applications is increasing.

## The Right Tool for the Job

As thermography grows in popularity in the moisture management-related industries, the number and types of tools available has grown as well. These professionals recommend looking for a durable, rugged tool with a simple user interface.

"You want to have enough capability in the camera that it gets you what you need without having so many bells and whistles that you can't figure out how to use it," says Wilson.

"A lot of people in this market have told me they've gotten rid of cameras that are too complex to use," says Harriman.

Quality is also important to these professionals.

"The low-end models I have almost no experience with," says Louis Relle. "We've heard complaints about the clarity of less expensive models."

Harriman notes that potential customers can find cameras for less than $7,000, but he recommends investing $7,000 to $20,000 for a reliable tool with high resolution.

"$7,000 and up, pretty much any camera will work," says Harriman. "It becomes more a question of balancing the price for the features."

He adds, "Everyone needs the best possible image they can get."

Harriman says he has also found that most water damage professionals "don't like color because it confuses the image."

Louis Relle has found some accessories to be useful.

Photo courtesy of the Building Science Institute.

**If they know what to look out for, building investigators and water damage professionals can use thermal imaging tools to rapidly pinpoint even a small area of moisture intrusion.**

"We have additional lenses for our units so that you can zoom in or look at things from a further distance," he says.

Edgar elaborates, "When you're looking at a 15-story building with thermal imaging, you can actually see those anomalies on the 15th floor when standing on the ground," he says.

## IR Advice

Wilson advises that anyone interested in purchasing an IR camera do their research first.

"People need to do their homework because there's a lot of differences. You want to make sure there's no hidden cost; is software with it or software extra; does it come with training; is it well matched with the purpose you want to use it for?"

He stresses that it's important to know the application for which the camera will be used, so the user can pick a featured capability that matches its use.

"My advice to everybody is try to avoid getting confused by superfluous features of cameras and focus on the resolution," says Harriman.

But just as important as research, Wilson adds, is picking up the tool.

"Try it out. Go get it, pick it up, see how easy it is to use, see how it feels in your hand," advises Wilson.

Wood agrees that, in the end, practice makes perfect.

"It's just like driving a car, the more practice you get the better you're going to get," says Wood. "You can read the manual, see where to put the key, where the gas pedal is … but to make it a nice, smooth trip it takes a lot of practice."

Once the camera is in hand, these experts remind new thermographers that training is crucial.

"On top of that practice, you do really need to understand building sciences and IR thermography. I don't think it's a wise idea to pick a camera up, push the buttons and expect to get results thereafter," says Wood.

"I think that training is essential," agrees Louis Relle.

Wilson notes that there are three recognized levels of IR certification.

"There is a 2-day course to become a Level 1 certified thermographer," he says.

"You can get further training. And you should if you get specialized applications," says Edgar.

Levels 2 and 3 offer more in-depth thermography training, appropriate for specialized applica-

tions or managing thermography programs.

Louis Relle adds, "We haven't really encountered anything in building investigations that wasn't covered in a Level 1."

Wood summarizes BSI's basic training session: learning how to "fine-tune" the camera, understanding what you're actually seeing and why, followed by more in-depth information on building sciences.

"You really need to know building construction and materials and how they are applied and what your substrates are," says Louis Relle.

Harriman agrees that training in building science gives new thermographers a big edge.

"For building investigators who are more experienced with industrial hygiene issues, I would greatly encourage them to go to one of Joe Lstiburek's and John Straube's building science symposiums," says Harriman (for more information on these symposiums, visit www.buildingscienceseminars.com). "What they need is to understand the complex layers of an exterior wall … and they need to understand the dynamic hygrothermal behavior of those layers as the sun plays across it during the day."

Harriman adds that investigators coming to thermography with a background in construction defects have an advantage.

"Their understanding of those [building] layers is the most important part of thermal imaging. They should understand they have a tremendous advantage over those who do not understand those layers; they should harness that knowledge and think about those layers in a dynamic situation where the sun rises and sets and where the shadows from trees fall on an exterior wall," says Harriman. "Basically they have a much shorter distance to go for effective and efficient use of a camera."

Harriman has some advice to offer water damage technicians as well.

"The biggest benefit for them is to use their camera … not just for scoping the job but also for managing the job. By that I mean that they can gain a huge benefit by seeing what's drying now versus what was dry yesterday."

He notes that by using thermal imagers daily, water damage technicians can track damp areas and quickly pinpoint when and where they should redirect their drying efforts.

"They'll speed their drying processes, because they won't be drying things that don't need it," says Harriman.

NEW HIRES

## DKI Adds Ken Larsen to Management Team

Ken Larsen

DKI Services Corp. in Bensenville, Ill., the parent company of Disaster Kleenup International Inc., appointed **Ken Larsen** as a business development director. He will be responsible for working across the DKI organization to develop new programs that benefit DKI's members, clients and corporate staff.

Prior to joining DKI, Larsen was a large loss drying coordinator with BMS Catastrophe where he prepared and monitored disaster preparedness plans and procedures, as well as evaluated and managed drying techniques on large projects. He also spent several years with Dri-Eaz Products as an educator, teaching many IICRC-approved curricula.

Earlier in his career Larsen spent 16 years as the owner of CR Restorations Ltd. in Vancouver. Larsen will be based in Dallas.

The Association of Specialists in Cleaning and Restoration (ASCR—now the Restoration Industry Association) awarded Larsen with its Golden Quill Award in 2004. He has served on the boards of several industry organizations, including the Property Claims Forum of California, ASCR's MHSI Council, ASCR's Allied Associations Committee and the Carpet Cleaners Institute of the Northwest, the latter of which he served as president in 1997. He holds 16 different IICRC certifications, and holds the two highest designations awarded by ASCR—Certified Restorer and Water Loss Specialist.

PROMOTIONS

## Munters Promotes Two

Russ Brown

**Russ Brown** has been named national sales manager, construction services, for Munters Moisture Control Services (MCS) in Glendale Heights, Ill., a division of Munters AB. Brown will be responsible for developing and implementing a strategic growth plan to build the construction services segment for MCS. He also will manage key national accounts, create marketing programs, foster employee growth and institute educational programs for MCS staff.

Prior to the promotion, Brown was national accounts manager for MCS for three years and directed the continued expansion of industrial drying services for the division. He also served as an MCS regional sales manager for five years.

Russell Spotten

**Russell Spotten** has been appointed national sales manager, surface preparation and coating applications, for MCS. In his new role, Spotten will be responsible for expanding MCS' service offerings to the industrial coatings market segment, and working with engineers, contractors and owners of major industrial facilities to develop climate control specifications that meet their project requirements. He also will oversee, train and support the MCS sales force in the industrial coatings segment.

## EnviroVantage Appoints Mold Remediation Director

Barry Williams

EnviroVantage Inc. in Epping, N.H., appointed **Barry Williams** to the newly created position of director of mold remediation.

Williams, who recently earned his commercial license in microbial applications, battled mold for years over eight acres of greenhouses as co-owner of a rose farm.

"We are confident Barry will enable us to develop and execute programming to help businesses and homeowners keep mold under control," says EnviroVantage president Scott Knightly.

## UVDI Hires Sales Managers

UltraViolet Devices Inc. (UVDI) in Valencia, Calif., hired **John Garnica** as Western regional sales manager. Garnica will have regional responsibility for the customer accounts serviced by the company's core UV products division ALTRU-V®.

Garnica comes to the company with more than 13 years of experience in sales management and consulting. Most recently he served as a marketing and proposal consultant helping small businesses pursue federal government contracts. Garnica holds a bachelor's of science degree from the United States Military Academy at West Point.

**Bruce O'Brien** has been hired as OEM sales manager. O'Brien will have global responsibility for major OEM accounts serviced by the company's sparks technology division as well as ALTRU-V®. O'Brien comes to UVDI with more than 23 years of experience in management, sales and operations with companies serving commercial and industrial customers.

Most recently he was the general manager for the Powertrain Assembly Division of ABB Robotics. He holds a bachelor's of science degree from Northern Michigan University.

### AIHA Appoints New Director of Communications

The American Industrial Hygiene Association (AIHA) appointed **Gina Veazey** as director of communications. Veazey will be responsible for the editorial and managerial functions for member publications, both print and online; provide strategic communications input and planning assistance to all AIHA departments; and contribute to AIHA's strategic direction. Veazey will also supervise the public relations function for AIHA. She comes to AIHA with more than 15 years of experience in association communications

Veazey will also work with other staff teams and the AIHA board of directors to develop and implement new programs and services.

### Ken Hulik Joins GZA GeoEnvironmental as Associate Principal

GeoEnvironmental Inc. in Norwood, Mass., an environmental and geotechnical consulting firm, announced that **Ken Hulik** joined the company as an associate principal. In his new role, Hulik will focus on industrial hygiene, as well as toxicology, environmental compliance, environmental management systems, design for the environment, occupational and non-occupational health and safety, ergonomics, chemical risk management, regulations and standards, loss prevention and due diligence.

A native of Detroit, Hulik most recently worked as consultant in the areas of legal practice, medicine, environment, health and safety and served as the director of the Office of Academic Development for Macomb Community College. He worked for 26 years with General Motors Corp. where he served as the director of global health and safety. Hulik earned a bachelor of science degree in chemistry and biology from Eastern Michigan University and a master of science degree in industrial hygiene and toxicology from Wayne State University School of Medicine.



If you would like to share information about new employees, recent appointments or outstanding coworkers, or if there is someone you would like to see profiled in a future issue, please e-mail mheadley@moldmag.com.

Behind a painted wallboard (above) and within the wall cavity (right) were some of the places researcher Ginger Chew found significant levels of mold growing in homes flooded by Hurricane Katrina.

## Researchers Study High Mold Levels in Katrina's Wake

In a study assessing flood clean-up procedures in New Orleans following Hurricane Katrina, a team of scientists led by researchers at Columbia University's Mailman School of Public Health report that household levels of mold and bacterial endotoxins in three single-family homes were so considerable that they equaled or surpassed those in waste-water treatment plants, cotton mills and agricultural environments. The study, published in the December issue of *Environmental Health Perspectives*, is the first comprehensive report documenting levels of mold and bacteria in homes that received sustained flooding.

Three New Orleans homes were selected for the study based on their levels of flood water, whether they were previously structurally sound and if they were located in an area likely to be rebuilt. The study examined the extent to which homes could be satisfactorily cleaned to enable reconstruction. Homes were inspected for roof leakage, standing water and the extent of mold throughout their interiors, as well as heating ventilation and air conditioning.

"From our data, it is clear that levels of mold were so high that we strongly recommend that those entering, cleaning and repairing flood-damaged homes wear respirators that are more protective than plain dust masks," says Ginger Chew, ScD, assistant professor of environmental health sciences at Columbia's Mailman School of Public Health. "While our assessments of the data are based on a small demonstration project, the results give a clear picture of what is acceptable in flood clean-up procedures."

The project was sponsored by the NIEHS Center for Environmental Health in Northern Manhattan and Enterprise Community Partners, and was carried out by the Mailman School of Public Health, the National Center for Healthy Housing (NCHH) and several other academic institutions.

"Our goal was to make recommendations for the safe removal of flood-damaged articles, safe re-entry into homes and safe levels of worker protection," says Jonathan Wilson, deputy director of the National Center for Healthy Housing.

According to researchers, these findings not only will inform those involved in current clean-up activities in New Orleans and other environments, but will benefit those responding to any future disasters.

## University Of Louisiana Students Test For Mold

Students and faculty members with the University of Louisiana at Lafayette's Department of Industrial Technology are aiming to raise mold awareness by offering free assessments of homes, according to an article in *The Daily Advertiser.*

Professors Gholam Massiha and Herbert Hebert of the Department of Industrial Technology, through the UL Systems grant, are testing homes that may have mold damage as a result of Hurricane Rita and subsequent flooding. The $30,000 grant UL received on January 12 will last until June 30, 2008, according to the paper.

Hebert told the paper that he and his students expect to test 100 homes in the area for mold. They hope the study will offer insight into the best mold-resistant materials for homebuilders to use, and best installation practices.

## Scientists Aim to Take Control of Humidity

Ventilation was a hot topic during the American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRAE) Winter Meeting in January in Dallas. Actually, *Ventilation in Hot and Humid Climates* was a seminar that focused on keeping buildings dry.

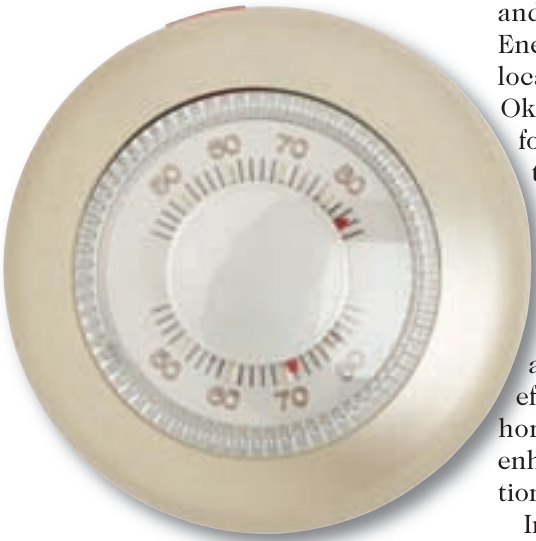
Armin Rudd of the Building Science Consortium studied efficient ventilation in humid climates in the United States.

"Some Southeast U.S. production builders began routinely installing supplemental dehumidification in the late 90's," Rudd says. He says those builders "found there were some fairly simple ways to improve humidity even at loaded times [of year]."

With this in mind, Rudd says "We want to be able to control humidity year-round just like we do temperature."

But there are challenges that arise when trying to control humidity.

"The bottom line is there will always be times of the year when there is little sensible cooling load to create thermostat demand but humidity remains high," he says.



**Armin Rudd says that homeowners will someday be able to control humidity year-round in the same way they control temperature.**

To get a better understanding of humidity control in homes, Rudd and Hugh Henderson of CDH Energy Corp. studied 43 homes, located in Texas, Florida and Oklahoma. Each home had one to four temperature/relative humidity (RH) measurements. Houses were grouped as standard-performance, medium-performance (approximately equal to an Energy Star 1 or greater rating) or high-performance (relative to a Building America standard of efficiency). The equipment in the homes varied from standard to enhanced air-conditioning, ventilation and dehumidification.

In the standard houses, researchers found that differences in the number of occupants and occupant behavior seemed to have a larger impact on ventilation than the type of equipment present. They also found that the conventional cooling systems usually provided reasonable humidity control—below 60 percent RH.

However, for the high-performance houses, the appropriate humidity levels could not always be met by conventional or enhanced cooling systems and typically required separate dehumidification systems.

"The combination of low sensible heat gain buildings with mechanical ventilation significantly increases the number of hours that require dehumidification without sensible cooling," says Rudd.

The researchers also concluded that "supplemental dehumidification enables energy savings of efficiency improvements that significantly reduce cooling demand while alleviating elevated indoor humidity" for high-performance houses.

## ASHRAE Researches Unitary Equipment

New research from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) will lead to better understanding of humidity control and energy cost when comparing unitary equipment.

ASHRAE Research Project-1254, *Evaluating the Ability of Unitary Equipment to Maintain Adequate Space Humidity Levels, Phase II*, was funded in part by the Air-Conditioning and Refrigeration Technology Institute.

"The results will help designers better understand the humidity control and energy cost impacts of the unitary equipment options compared in this project," says lead researcher Michael J. Witte, Ph.D., GARD Analytics. "Many of these options are in limited use so actual performance experience is not available for a broad range of building types or climates. This comparison of 18 system types across seven building types in 10 climates provides additional equipment selection information."

The project provides designers with:

- Comprehensive analysis of humidity control performance of a wide range of DX system configurations, including sub-cool reheat, dual-path systems, enthalpy heat recovery and desiccant dehumidifiers.
- Significant advancement in whole building energy simulation capabilities for modeling DX equipment by adding new capabilities to EnergyPlus.
- Identification of key issues for further exploration to better understand some of the key drivers and possibly develop some simple new system configurations that can efficiently control humidity.

**www.ashrae.org/research**

INDUSTRY NEWS

# ASCR Announces Name Change, Renews Focus

The Association of Specialists in Cleaning and Restoration (ASCR) announced a major rebranding of their trade association. President Brian Spiegel, CR, announced in February that the trade group will now be known as the Restoration Industry Association (RIA). The change was effective immediately.

"The new name, Restoration Industry Association, captures the common thread inherent in the function and pursuit of every RIA member business," Spiegel says. "The very nature of what the industry *does* is "restore"—returning things to their previous or better condition."

Though the ASCR has been around for 60 years, the association felt the name change would cover a broader part of the industry.

Spiegel adds, "Whether the business is cleaning rugs, carpets or textiles, damage restoration or environmental remediation, Restoration Industry Association is a name that encompasses all of these operations and supports the RIA mission to 'provide industry leadership, support science and promote best practices.'"

Don Manger, the RIA's executive director was also on board with the move. "It is a logical progression in our effort to redefine the trade association's role within the industry," he says. "Our goal is to represent member interests, provide critical information and take action on important initiatives that affect our members and the customers who rely on their services."

Other aspects of the rebranding to be rolled out in the coming months include a new consumer-oriented website. Victims of natural disasters such as tornadoes and hurricanes, home or business owners with suspected mold or other environmental hazards and individuals or companies seeking information regarding rug and textile cleaning will be served by information and guidance from industry professionals.


**RIA president Brian Spiegel outlined reasons for the association's name change at the Solutions Conference, March 13-16.**

Industry members will see changes in the revamped fall conference scheduled for October 23-27, 2007, in

COMPANY NEWS

## SERVICEMASTER CLEAN LAUNCHES REMOTE MONITORING

ServiceMaster Clean, headquartered in Memphis, Tenn., launched the first nationwide remote monitoring service for water damage recovery. This new drying technology should allow greater efficiency for insurance providers, policyholders and ServiceMaster technicians alike. Remote monitoring will begin a service roll-out during the first quarter of 2007 and will continue to expand in the marketplace to ServiceMaster Clean customers throughout the year.

The remote monitoring program should deliver consistency in data reporting and reliable, real-time data to insurance providers, according to the company. The technology eliminates the chance of human error, and will reduce complications that sometimes arise during the drying process because the real-time monitoring software will instantly alert technicians to any problems, according to ServiceMaster Clean. Additionally, homeowners and insurance representatives will have the ability to track their water damage recovery progress online.

"We are constantly striving to deliver consistent data reporting to insurance providers as well as a complication-free disaster recovery to homeowners," says Jeff Coulter, vice president of disaster restoration. "The development and national implementation of remote monitoring is a key step in achieving this goal."

**www.ServiceMasterClean.com**

Garden Grove, Calif., and continued progress on legislative representation, according to a news release from the association. Strategically, RIA intends to become more active in preserving and protecting best practices in the restoration industry, resulting in more options and higher standards for consumers.

RIA is also committed to education within the industry and aims to continue providing high caliber certification programs in the areas of environmental and textile restoration. Augmenting the varied skill sets and proficiencies of members, RIA will continue offering education events on business practices for optimum efficiencies in the workplace.

**www.restorationindustry.org**

ONLINE

### Online Community Compares Labs

Lab Comparisons Inc. of Chicago created an online community at www.Labcomparisons.com where customers of laboratories can share and rate their experiences.


**This website from Lab Comparisons Inc. provides laboratory customers with a resource for learning more about their local lab.**

The goal of the website is to help users find the industrial hygiene, microbiology or indoor air quality laboratory that matches their needs. It offers comparisons of laboratories based on price, accreditations, customer reviews and geographic location. Reviews are encouraged by the company. The website also connects users to lab news, and other information on each participating lab.

The site is free to users and laboratories.

Lab Comparisons launched a similar site for products, www.IAQcomparisons.com. The site helps IAQ consultants and remediation contractors compare different products based on their technical specifications, pricing and customer reviews.

### Restoration Industry Training Moves Online

The Entrepreneurial Learning Center, headquartered in Eugene, Ore., developed a program called *The Restoration Excellence Training Series*, which is now available to the restoration industry online at www.elctraining.com. The instructors in the program will include Steve Toburen, Chuck Dewald, Barb Jackson, Dr. Michael Pinto, Business Mentors and more. The subject matter covers a full spectrum of subjects from technical topics for the front line staff to management lessons for the owner.

The series is geared to help restoration companies improve operations, increase competency of front line staff, create a culture of service, improve job profitability, improve marketing efficiency and grow a company. Technical sessions will focus on cross training and orientation for new technicians. Management classes will assist in creating a solid foundation for growth and profitability.

*The Restoration Excellence Training Series* offers nearly 48 hours of online streaming video that can be viewed an unlimited number of times. One new topic is discussed every month over a twelve month period. This allows a company to offer regularly scheduled, industry-specific training to its staff, without having the expense of sending each employee to offsite locations.

**www.elctraining.com**

KUDOS

### DKI Named #75 Largest Franchise Company Worldwide

Disaster Kleenup International Inc., a property damage restoration contracting organization based in Bensenville, Ill., earned the #75 ranking in *Franchise Times*' "Top 200 Franchise Chains by Worldwide Sales." The rankings are based on size, sales and units.

With worldwide sales reaching $1.089 billion, DKI ranks ahead of such well-known companies as Krispy Kreme Doughnuts, Bennigan's Grill and Tavern and Roto-Rooter. McDonald's topped the list with over $50 billion in sales. This is the seventh year the list has been published and the fourth year DKI has been ranked.

**www.disasterkleenup.com**

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## TOOLS AND EQUIPMENT

### Mold Stripper Tape Lifts Mold from Materials

Mold Stripper Tape from Bright Ideas LLC of Louisville, Ky., utilizes a fungicide and a unique adhesive to kill and remove surface mold from most structural materials. It can also be used for remediation containment purposes.

For isolated areas infested with mold, Mold Stripper Tape is applied over the material. The company says that this allows the substrate to be cut out and removed without cross contamination or the need to isolate an exit route to the outside with large quantities of plastic sheeting.

The tape treats and kills molds and lifts them out without harm to the host material. The tape is applied to the contaminated surface and allowed to take effect. Then, after approximately 20 minutes, it can be removed along with dead surface mold. The tape has no noticeable odors, and delivers even, consistent fungicide coverage, according to the company.

**www.jemenvironmental.com**

### Phoenix Quickly Creates Drying Chambers

Looking to quickly contain a water loss affected area? The Quick Chamber, from Phoenix Restoration Equipment in Madison, Wis., is an easy way to create a drying chamber in minutes. This containment can be installed by one person almost anywhere in the structure simply by sealing open thresholds and passageways.

Once installed, the chamber restricts moisture transfer into and out of the water loss affected area. The company says this stops secondary damage at the beginning of the job, and enhances the dry-down by preventing moist air from migrating into the drying chamber.

The unit features lightweight rigid aluminum parts, L feet that positively lock plastic in place and spring clip retainers to hold plastic during set-up to maintain a tight seal. The system includes a carrying case with dividers, three Quick Chambers, each adjustable from 27- to 48-inch wall separation, and one extender bar, extending the range of any Quick Chamber to openings from 48 to 73 inches.

**www.usephoenix.com**

## TESTING

### Clean Air Labs Patents Microbe XPS™ Process

Clean Air Labs in Oak Ridge, Tenn., filed a patent for the Microbe XPS process. The filterless process rapidly captures and extracts endotoxins and glucans out of the air. According to information from the company, the extraction process for glucan, a component of the cell wall of mold or fungi, is similar to that of the endotoxin. It allows air quality managers to rapidly deter-

## DISINFECTANTS AND CLEANERS

### Zinsser Washes Mold Away

Zinsser in Somerset, N.J., introduced PERMA-WASH™ disinfectant and fungicide interior concentrate, a disinfectant, fungicide, virucide, bactericide, mildewcide and mildewstat in one.

PERMA-WASH features Cryocide® disinfectant technology. The concentrated formula works rapidly and thoroughly to control mold and mildew on hard, non-porous surfaces in a single treatment, making it suitable for mold remediation and disaster restoration.

EPA-registered for mold and mildew control, PERMA-WASH also has disinfectant, cleaning and deodorizing properties.

The company says its potent biocide won't discolor surfaces and has less of an odor, is less corrosive and less damaging than household bleach.

**www.zinsser.com**

mine with accuracy whether endotoxins and glucans exist within their facilities and at what levels.

The system is a replacement to the filter-based endotoxin extraction process. It avoids the possibility of a sample bias at either the high or low end of the spectrum, according to the company. It also bypasses the problem of filters which are made of products naturally high in endotoxins and glucans.

➡ **www.cleanairlabs.com**

### Aerotech Outfits IAQ Pros

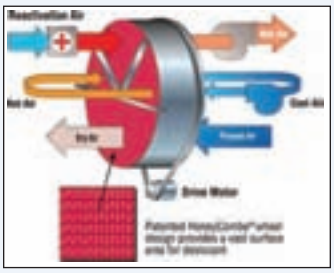
The new mini mold inspection kit MoldSnap, from Aerotech Laboratories Inc. in Phoenix, is suitable for the new indoor air quality (IAQ) professional and provides the basic equipment needed for IAQ sampling. Supplied in a heavy-duty case, the kit is stocked with a high volume AeroLite™ II pump with stabilizing suction cup feet, six feet of PVC tubing, a Dwyer® adjustable rotameter, 10 MoldSnap™ cassettes, 10 tape lift kits, 10 sampling bags, 5 AeroSwabs™, 1 Wallchek adapter, an AeroCD and a universal air sampling tripod. The equipment meets IESO standards for sampling.

➡ **www.aerotechlabs.com**

## DEHUMIDIFIERS AND DRYERS

### Munters Patents PowerPurge™

The U.S Patent and Trademark Office approved a patent for Amesbury, Mass.-based Munters Dehumidification Division's new PowerPurge energy recovery option, available with the company's integrated custom air handling (ICA) desiccant dehumidification systems. It is designed to improve the performance of ICAs by delivering air at drier levels, while using significantly less energy, than traditional active desiccant dehumidification systems.



PowerPurge acts as an energy recovery system, collecting waste heat off of the hottest section of the desiccant wheel and using it to help with the regeneration. The company says this reduces the energy required for reactivation while lowering the discharge temperature of the process air, decreasing energy costs for post cooling.

➡ **www.munters.com**

### Air Mover Provides Efficient Drying Power

Designed to move air and assist dehumidifiers during the drying process, the AM3000 air mover from Ground Heaters Inc. in Spring Lake, Mich., offers fast and efficient drying power with few electrical power requirements.


The AM3000 provides an airflow rating up to 3,000 cfm, extracts only 2 amps of power, and moves air up to 25 feet away from the unit.

Standing 24 inches high and weighing only 20 pounds, the AM3000 provides easy maneuverability. A 12 A GFI plug enables up to six units to be powered together from one 15 A receptacle. Units can be stacked three high during operation to provide multi-unit operation and convenient storage.

➡ **www.groundheaters.com**

### Sylvane's Dehumidifiers Address Mold Concerns

Sylvane Inc. in Marietta, Ga., offers a broad array of dehumidifiers, from simple stand-alone room dehumidifiers to ducted whole house units and specialized industrial low temperature units.

The Santa Fe dehumidifier is most commonly used for large or damp basement environments. The Energy Star®-rated unit can be used stand-alone in a basement or can also be ducted.

For customers with more modest dehumidification needs, the company says its DeLonghi dehumidifier line may be a good fit. These units are also Energy Star-rated and come in varying capacities for different size areas and conditions. In addition, the company says it is one of the only manufacturers to provide a built-in condensate pump on select models at a relatively low price point.

For customers with more industrial or specialized requirements, the company also carries Ebac dehumidifiers. These units are rugged, commercial-grade units with very low temperature operation.

➡ **www.sylvane.com** m

# MARKETPLACE

## SERVICES



## CONSULTING SERVICES



## MOISTURE CONTROL SERVICES





Remediation

*continued from page 35*

### Mold Laboratory Scores A Perfect 10

Environmental Diagnostics Laboratory, the in-house microbiology laboratory of Pure Air Control Services of Clearwater, Fla., received a perfect score (fungi and bacteria) for the second year on the Environmental Microbiology Proficiency Analytical Testing (EMPAT) program, a performance evaluation sponsored by the American Industrial Hygiene Association (AIHA).

The EMPAT program was designed and developed for microbiology labs specializing in analysis of microorganisms detected in air, fluids and bulk samples. EDLab was tested in both bacteria and fungi categories, and received 100 percent in both areas. It is rated proficient if two of the last three consecutive EMPAT rounds have passing scores.

**www.pureaircontrols.com**

## Briefly ...

After a watershed year in 2006, in which Epping, N.H.-based **EnviroVantage Inc.** changed its name, opened new headquarters, added more than 300 clients and added a mold specialist to its staff of experts, the firm is aiming to become a one-stop shop for the safe handling of every major building contaminant, including mold. **www.envirovantage.com** ... **Disaster Kleenup International** (DKI) announced in its fall newsletter that it has partnered with the **Chuck Dewald Structure Drying School** to offer DKI Network Members and DIAMOND Affiliates the opportunity to improve their knowledge. The Chuck Dewald Structure Drying School also offers classes for insurance partners to allow adjusters to better understand what DKI members do on a drying job.

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# Calendar 2007

**May 3-5, 2007**
**Connections Conference and Exhibition**
Hilton Clearwater Beach Resort.
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Contact: 888/881-1001.

**May 3-5, 2007**
**AIA National Convention and Design Exposition**
Henry B. Gonzalez Convention Center.
San Antonio, Texas.
Sponsored by the Architects Institute of America (AIA).
Contact: AIA at 202/626-7300.

**May 30-June 1, 2007**
**PCBC 2007**
Moscone Center.
San Francisco.
Sponsored by the California
Building Industry Association.
Contact: PCBC at 800/956-7469.

**June 2-7, 2007**
**AIHce 2007**
Pennsylvania Convention Center.
Philadelphia.
Sponsored by the American
Industrial Hygiene Association.
Contact: Claire Davis at 703/846-0753.

**June 18-21, 2007**
**NEHA Annual Conference**
Tropicana Atlantic City Casino and Resort.
Atlantic City, N.J.
Sponsored by the National Environmental
Health Association (NEHA).
Contact: Toni Roland at 303/756-9090.

**June 19-21, 2007**
**Disaster Restoration**
**Contractor's Conference and Trade Show**
Doubletree International Plaza Hotel.
Toronto.
Organized by DRC Services Ltd.
Contact: DRC at 905/564-8218.

**June 23-27, 2007**
**ASHRAE Summer Meeting**
TBA.
Long Beach, Calif.
Sponsored by the American Society of Heating,
Refrigerating and Air-Conditioning Engineers
(ASHRAE).
Contact: Judy Marshall at 404/636-8400.

**July 12-14, 2007**
**2007 Southeast Builders Conference (SEBC)**
Orange County Convention Center.
Orlando, Fla.
Sponsored by the Florida Home
Builders Association.
Contact: SEBC at 800/261-9447.

**September 12-14, 2007**
**Connections Convention and Trade Show**
Las Vegas Hilton.
Las Vegas.
Sponsored by Connections Events Inc.
Contact: Connections Events at 888/881-1001.

# Fifteen Minutes of Fame

We've noticed mold remediation and water damage restoration companies appearing in their local newspapers, and we're taking a moment to extend their recognition. While offering their valuable services to their community, these companies are promoting awareness of how consumers can prevent and treat water damage.

Has your company been mentioned in the consumer press? Send a link to the article to mheadley@moldmag.com, or a newspaper clipping to *Mold & Moisture Management* Magazine, P.O. Box 569, Garrisonville VA 22463.

## Restoration Company Discounts Services to State Theater

Ken Stein, executive director of the Austin Theatre Alliance, would probably have thanked someone if they had left him high and dry on June 13. Instead, in the middle of a run of the play "Bunk Bed Brothers" at the State Theatre, Stein found his venue engulfed in close to six feet of water. A broken water main behind the historic theater caused the damage.

A member of the Alliance contacted The Steam Team, an Austin, Texas-based cleaning, restoration and catastrophe management company.

"We pumped thousands of gallons from the theatre," says owner David Marquardt. Once the water was removed, generators and emergency lighting were brought in to allow the company to work 24 hours a day to mitigate the damage. Throughout the nine-day process, the company used fans, dehumidifiers and air scrubbers, in addition to an ozone machine.

When all was said and done, the Austin Theatre Alliance was looking at a bill in excess of $100,000. However, according to a news release from The Steam Team, because the company has made community involvement a priority, Marquardt discounted the bill by nearly 40 percent.

## Iowa Paper Gets the Exclusive on Water Removal

Readers of the *Des Moines Register* learned all they ever needed about emergency water removal when a reporter with the newspaper sat down with Shane Madison, president and owner of ProDry. In February Madison, an entrepreneur who began the water removal company in June 2006, answered questions about the services ProDry offers.

Madison explained to the reporter the type of equipment he stores—including air movers, dehumidifiers, chemicals, drill bits, tubes, garbage bags, Tyvek suits, flashlights, a moisture meter, tack strips and so on—in the two trucks the company owns. He also explained the different types of water the company cleans up and the importance of arriving to the jobsite quickly. Madison told the reporter that technicians are ready to respond to a water emergency within one hour in order to minimize possible damage.

Madison says that Des Moines sees about 300 water damage cases every month, and his goal is to capture 10 percent of that business. In addition, Madison owns a construction company, which he says is a good fit with the water removal business as it gives him access to construction services, should reconstruction be necessary. m

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