April-June 2005 | Volume 2 | Issue 2

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The Magazine for Moisture Prevention and Remediation

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An in-depth section just for remediators, featured in every issue.

A Warm Welcome

Welcome to the second issue of *Mold and Moisture Management* magazine. Since its debut on January 12, we have been a bit overwhelmed by the response to the magazine. It's been quite heartening to hear from so many readers—builders, architects, contractors, remediators and more—who tell us that they have needed something like **Moldmag** for a long time. "Moisture prevention has become a top priority for our company," said the president of a major home-building company I met at the International Builders' Show. "It is a major priority because NOT preventing it is so costly. Before your magazine, we had to piece information together, now we have it in one place."

"I am thrilled to have *Mold & Moisture Management* to read," wrote another subscriber. "It's already helped me find some new products that we can use and learn some things I didn't know."

Art director Brenda Cabrera as herself...

And those are our goals: to help you learn some things you didn't know and find some new and helpful products. So, in just three short months, publishing **Moldmag** has become a labor of love.

That's obvious among our entire staff too. Editor Megan Headley tells me that she can no longer enter a building without assessing its moisture levels. Our graphic artist Christopher Bunn spent weeks conceptualizing a look for **Moldmag**. Chris turned it into reality with artist Dawn Campbell and under the watchful eye of managing editor Kim White.

Art director Brenda Cabrera, who designs a good many of these pages, went a step further. Megan had an idea for the cover of this issue that would show both the architect and the contractor's handiwork in constructing a building—from blueprint to reality. Brenda took the cover shots you see, secured the actual blueprint design and then went on to create the page—literally doing the entire cover from photography to design herself this month.

... and receptionist Pam Marth as mold itself.

But these dedicated and talented people aren't the only ones getting excited about the new magazine. So it should not be too difficult to guess what our receptionist Pam Marth was dressed up as for our own KeyComm Halloween party. That's right, she came as mold.

"It was pretty fun," said Pam. "Our whole office knew right away what I was, but people on the street kept coming up to me asking me who I was dressed as. They'd give me a very funny look when I said 'I'm mold.'"

I bet they did, Pam. I bet they did. -Deb Levy

mold™ & MOISTURE MANAGEMENT MAGAZINE

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Mold Growth Guaranteed

Contractor's Assurance Can't Compare to His Insurance

by Charles Perry

Charles L. Perry, Jr., is principal of Environmental Assurance Group.

Q. *I'm looking for some advice. I'm doing some home remodeling and my builder took my roof off as part of the process ... it then rained for three days. Water got between the walls and in the ceiling, plus my carpet got wet and moldy. My contractor assures me that it will dry out ... but how do I find out?*

A. You definitely do have a problem, and this is a serious issue. If the roof was really off and if it really rained for three days—then the walls, the carpet, the ceiling, it's likely all going to have to come out.

The part of your letter that stands out first is that the contractor assured you it will dry out. You need to find out if the contractor has anything to back up this assurance. Is there liability covering water intrusion and mold? Is the contractor willing to put something in writing? If none of these two things apply, the contractor's assurance is really just a pat on the head, because he's not offering you anything. Another thing that could make a difference is whether or not the roof was tarped—did the water leak in or was the roof completely exposed to the elements?

Assuming it did rain for three days, you should know it doesn't have to rain to grow mold. Not only that, but if it rained and then the sun came out, that could be even worse. If there are food products for the mold to feed on—and that could include your walls, ceiling and carpet—then introducing water and sunlight could make things worse.

As far as food products, you need to ask the contractor if the walls are made of plaster or drywall, which is the more likely of the two. If it is drywall, you need to find out if it is paper-faced or fiberglass. If they're paper-faced boards, I can almost guarantee mold growth. Also find out whether your ceiling contains cellulose or paper. As far as the carpet, if it is wet and moldy, you have a real problem and there's really not much you can do about it. You're going to have to get rid of it.

Usually, if you're going to get mold growth, it's going to take approximately 4 days, starting after approximately 48 hours.

At any rate, this is likely a serious problem. So what steps should you take at this point? I can tell you what I would do in this situation. First, I'd contact an attorney. Next, I'd get indoor air quality testing done. Unfortunately, I'm so sure of what's going to happen that I'd contact the attorney first.

It's also worth remembering at this point that you're not alone in this situation; unfortunately, it's a fairly common problem. This was a planned roof removal, but it's exactly what people down in Florida are still going through; when the hurricane blew roofs from houses and the water came in, mold was the result. m

FEEDBACK

What concerns do you have about preventing or treating a moisture problem? Send your questions to the experts by emailing mheadley@moldmag.com.

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Mold and the "Expert"

All Is Not As It Seems

by J. Nick Badgerow and Kelly A. Campbell

J. Nick Badgerow and Kelly A. Campbell both practice law at Spencer Fane Britt & Browne LLP in Kansas City.

Lawsuits claiming that mold in houses and other buildings have caused physical, cognitive, emotional and financial damages to plaintiffs are proliferating. An important factor leading to this litigation explosion has been the self-creation and self-promotion of so-called "experts" in mold detection, testing and remediation.

Lawsuits Need Experts

Negligence is defined as a departure from the applicable standard of care. For example, builders are considered negligent if they fail to take actions during construction that other reasonable and prudent contractors would take under the same or similar circumstances.

Unless a lawsuit involves claims that most people can understand, a plaintiff usually needs assistance from a witness with recognized expertise in the field the lawsuit addresses.

For example, a jury can figure out—without an expert—that the ordinary contractor should not build concrete walls without steel reinforcement. Without expert guidance, however, an ordinary jury is unable to determine how much steel, of what gauge, should be installed at what intervals in the same concrete wall. In those instances, a court will require a plaintiff to prove a departure from the standard of care through the testimony of expert witnesses.

Not surprisingly, there is money to be made in remediating mold and in testifying as an expert. After all, in order to prove his case in the developing field of mold litigation, a plaintiff needs an "expert" to study the house, take samples, test them and identify the mold substances and levels of concentration in the house. Then the expert will be required to express an opinion about whether the homeowners' health conditions were caused by the mold.

We feel it is unfortunate that there are no state regulations and no established industry standards for mold inspectors or remediators.

"Unless a lawsuit involves claims that most people can understand, a plaintiff usually needs assistance from a witness with recognized expertise in the field the lawsuit addresses."

As a result, almost anyone can become a mold inspector. For example, the website for an unregulated organization called the Certified Mold Inspectors and Contractors Institute offers an online course for $1,000, with an online exam, followed by a telephone quiz. Upon completion of these three steps, the graduate receives a certificate and a mold inspector badge.

This means non-credentialed "experts"—some armed only with a "mold inspector badge" issued by the unregulated Certified Mold Inspectors and Contractors Institute—can find mold, test it according to self-adopted procedures and then conclude that any homeowner health problems are caused by mold. This can all occur despite the fact that there is little medical evidence connecting mold to lung injuries, cognitive impairments and emotional distress—a topic to be addressed in a future column.

The state of Oklahoma has adopted a law prohibiting mold inspectors from also selling remediation services. The state requires inspectors to comply with a state-imposed public education program with the goal of informing the public, not just themselves.

What You Can Do

The key for the seller, builder, component supplier or other entity being sued is to be proactive. Do not accept plaintiffs' "experts" and their opinions or reports at face value. Inquire into the actual qualifications, background and experience of each expert. Most importantly, obtain experts of your own to evaluate and critique the credentials of their tests, results and conclusions.

In Conclusion

Mold claims are on the rise. Large verdicts or settlements in some high-profile cases have generated this increase, fueled by publicity through the national media. The increase is also attributable to the growing number of self-proclaimed and unregulated "experts." The courts must exercise their prerogative as gatekeepers to prevent the jury from hearing and considering incompetent evidence. But even if they are allowed to proceed, the responsible defendant should be prepared to cross-examine the absence of standards and the bias of the "expert" to help plaintiffs against builders.

To learn more about Oklahoma 2004 House Bill 2554, visit www.lsb.state.ok.us/2003-04HB/HB2554_int.rtf.

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Radical Differences By Design

The I-Codes and the Architect's Standard of Care

by Colin Murphy and Lonnie Haughton

Colin Murphy is a founder and managing partner of Exterior Research & Design LLC, a building envelope forensics, testing and design consulting firm based in Seattle. **Lonnie Haughton** is a senior project manager with Posard Broek & Associates in San Anselmo, Calif.

It is easy to see that the primary intent of the older Model Code and the new International (I-) Code is identical: the builder's use of flashings at exterior wall transitions to ensure construction of a fully weather-resistant building envelope. However, there is a radical difference between these two code sections. Architects should compare the requirements of the following building code sections closely:

- "Weather-exposed surfaces shall have a weather-resistive barrier to protect the interior wall covering … Exterior openings exposed to the weather shall be flashed in such a manner as to make them weatherproof," 1997 Uniform Building Code, section 1402.
- "Exterior walls shall provide the building with a weather-resistant exterior wall envelope … The exterior wall envelope *shall be designed* and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior veneer …" 2003 International Building Code (IBC), section 1403, and 2003 International Residential Code (IRC), section R703.

The difference is the addition to the new I-Codes of two critical words: "be designed." In those jurisdictions that have adopted the I-Codes, building designers are now responsible for providing to the builder sufficient details and guidance for weatherproof construction of the wall and roof covering systems.

Until the I-Codes' adoption, architects often were allowed to pass all or part of this design responsibility to the builders by doing nothing more than calling out "building paper" and "flashing" on a typical wall section. We have seen construction drawings in which the architect's guidance consists solely of the specification: "comply with code requirements."

> "Building designers have been burdened with the clear responsibility of providing to the builder a weatherproof design…"

If these exterior walls or roofs begin leaking, who do the architects loudly blame? The builders, of course, for their failure to comply with the architects' overall design intent, represented by their references to building paper and flashing and the code.

It is our experience that this design intent defense by a project architect has worked well in litigation process because the builder's continuation of the construction constitutes acceptance of the additional responsibility and a commitment by the builder to carry out the work in conformance with the controlling building code.

Later, when building envelope failures result in water infiltration and mold damage claims, the builder's only defense often is the hollow mantra, "I built it exactly how the architect detailed it." While literally true, this argument often fares poorly against the design intent defense—unless the designer also has provided regular monitoring of the ongoing work under a contract administration agreement or, as is required in some jurisdictions, has a statutory obligation to oversee the design, and thus should have noticed the defects that resulted in water damage.

Now, with the advent of the I-Codes, building designers have been burdened with the clear responsibility of providing to the builder a weatherproof design for the exterior walls and the roof. "Be designed" is an example of a performance requirement. Designers simply are advised that their design must provide weatherproof performance. The IBC provides little or no prescriptive guidance for achieving this goal, but does require the designer to "provide details of the exterior wall envelope as required."

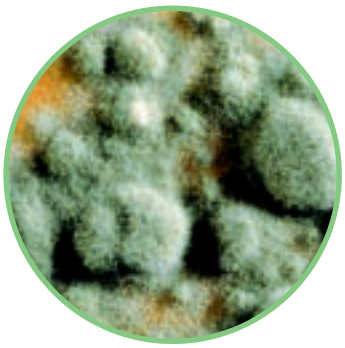
An excellent example of the difference between performance and prescriptive language is a comparison of how the IBC and IRC address joint overlaps of loose-laid sheet goods used as the weather resistive barrier. The IRC (Section 703.2) prescribes minimum 6-inch vertical overlaps and minimum 2-inch horizontal overlaps, while the IBC (Section 1404.2) simply requires the overlaps to be appropriately configured to provide continuous water-resistive performance.

Under the IBC, as the building designer specifies the weather-resistive barrier, he is expected to evaluate local climate conditions, the potential effects of the building's exposure and the expected performance of the cladding and flashing systems to determine appropriate overlap dimensions.

Unfortunately, some designers will remain unaware of the new design and performance requirements of the I-Codes until the issue is raised by a construction attorney representing the owner or builder of a damaged building. m

A Growing Concern:

Condensation can lead to more than bacteria and molds. It can increase the likelihood of fungi, viruses, and mites that cause respiratory infections, allergies and asthma.



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The Proactive Approach

Mold Prevention from One Builder's Perspective

by Donald L. Pratt

Donald L. Pratt is president of Wake-Pratt Construction Co. and a consultant for the construction industry.

While mold serves a significant role in our environment, we don't knowingly invite it into our homes. In fact, many have suffered the devastating health and financial consequences of playing host to this unwelcome houseguest. Since conditions suitable to mold growth exist in every building, a proactive approach in preventing future mold problems begins at the time of construction.

My job as a homebuilder is to ensure that the home is built to eliminate water intrusion and prevent leaks. Given the nature of water, the task isn't an easy one.

The home's structure consists of various construction systems that must work in perfect harmony to provide adequate protection from outside elements. First there is the shell, consisting of the roof, walls and foundation. The shell is then covered with a weather-protective skin made up of roof shingles, weather-resistive sheathing paper, siding, brick or masonry and foundation damp proofing or waterproofing.

Windows, doors and other openings require penetrations in the shell and skin. The plumbing and HVAC systems can also present challenges, but it's the joints between the construction components and areas where there are penetrations in the skin that most problems with water intrusion occur. Regardless of the cause, be it product failure, improper installation, neglect, an act of God, or anything in between, the result of water infiltration can be devastating.

Windows and other openings require penetration of a structure's shell, and it's here where many moisture problems occur.

Given opportunity and an opening, water will enter a home. A single mold spore then has all it needs to multiply—food source, environment and moisture. After about 48 hours, your uninvited guest will begin to party at your expense.

Precautionary Steps

Quality new homes are built with care and professionalism. But these days, more is required. Smart builders know they must "self-insure" against future mold problems on every job. This means taking precautionary steps to document the correct installation and assembly of all construction systems adequately. Builders must remain vigilant and ensure that trades work together toward the same goal.

I recommend taking pictures during the construction process to verify complete compliance with all requirements of the code and with manufacturer's installation instructions. Photographs and other documentation can prove invaluable to all parties in the event of a subsequent leak or mold situation.

Builders can and should include the homeowners in an ongoing "mold prevention plan." Working together from the earliest stages of construction can go a long way toward creating and maintaining a lasting relationship that will ensure you'll be immediately notified of any future water intrusion problems. Where appropriate,

builders can suggest and use mold-resistant materials.

Materials' Importance

There are excellent roofing materials on the market today. However, products such as shingles, flashings, felt and ice and water shield are only as good as their installation. Improperly installed materials can result in a roof system failure. One exposed roofing nail or a missing piece of ice and water shield can result in a leak. An improperly nailed shingle can lift in a wind storm and cause water intrusion. A roof with improper ventilation and/or inadequate insulation can create condensation and cause accumulated moisture to seep into the structure.

By asking to be advised immediately of any leaks, you may prevent a major problem such as the one seen here on the underside of this floor decking.

The siding and the masonry veneer are equally important. Siding installed without the proper lap or flashings can leak. Brick and other masonry veneers are porous, so moisture can penetrate them. If the structural wall behind the veneer is not protected sufficiently, it too can allow water intrusion. This can be eliminated by properly installing housewraps or asphalt felt. Flashings, correctly sized and properly installed around windows, doors and other penetrations, are essential to preventing water intrusion. Along with proper foundation flashings, weep holes must be installed in masonry veneer to ensure that moisture is kept on the exterior of the structure.

Basement and crawl space walls need to be covered with damp proofing or waterproofing as required by building codes. These walls can, and do, crack. If the crack is leaking or seeping water, it is necessary to remedy the situation immediately. A crack can be dealt with easily and economically through the installation of an injection procedure from the inside of the wall.

"Regardless of the cause, be it product failure, improper installation, neglect, an act of God, or anything in between, the result of water infiltration can be devastating."

It is important that the finished grade adjacent to the foundation be sloped away from the house to divert the water from settling next to the wall. Building codes require that the earth be sloped a minimum of five percent away from the foundation and all roof drain discharges be at least five feet away from the foundation.

The Final Warning

In turning over keys to the homeowner, the management and control of excess moisture in the home is also transferred. The key to controlling mold growth is in the ability to control excess moisture in the home. Homeowners must understand what to look for and where leaks are apt to occur. Plumbing system leaks are usually obvious but other leaks can be more difficult to detect. Moisture at the top of a basement wall might be the result of a leak at the top or side of a window or door due to improper flashings, or a lack of foundation flashing or weep holes. Moist window or door sills or moisture at baseboards might signal improper installation of flashings or housewraps. In addition, I advise homeowners to keep indoor surfaces dry and to maintain a relative indoor humidity at 50 percent or below. Moisture on windows or other cold surfaces may signal a high humidity level.

Because locating and eliminating any source of excess moisture, followed by the prompt and thorough cleaning of all affected areas, are critical, I ask to be advised immediately in the event of any leak. Homeowners know that a company representative will respond promptly and work with them to satisfactorily resolve the problem. In my business it just makes good sense to subscribe to the maxim, "An ounce of prevention is worth a pound of remediation." m

When It Rains, It Pours

Florida Buildings Suffer From Poor "Rainwater Management"

by Larry Livermore

Larry Livermore is the technical standards manager for the American Architectural Manufacturers Association (AAMA).

The full impact of last summer's hurricanes may take a long time to register. That lives were lost and an untold number of homes were destroyed is devastating, but the repair work will take years to complete. For those homes that survived the storms, the abnormal amount of water penetration is likely to breed conditions for the development of mold, which may take years to discover. Through this, the building industry has been subjected to a test of all time. The question is, what did we learn from these storms that can be applied to future construction and manufacturing practices?

A 65-page report entitled *Rainwater Management Performance of Newly Constructed Residential Building Enclosures during August and September 2004* details a number of water penetration problems related to residential construction in central Florida. Issued in January, the report was prepared by Joseph William Lstiburek, Ph.D., P. Eng., of Building Science Corp., for the Home Builders Association of Metro Orlando and the Florida Home Builders Association. Frankly, one cannot read the entire report without wondering about the potential emergence of a mold epidemic in hurricane-affected states.

By the Book

A key principle in the design of any product or building is the recognition that it is virtually impossible to completely eliminate water infiltration. Therefore, walls are constructed so that infiltrating water will drain down and out of the building or the structure can be built with a barrier wall. In these instances, moisture penetration is absorbed in the mass of the wall and dries out naturally through evaporation during warm, dry cycles.

Typically, drainage walls are surfaced with vinyl siding, brick, stucco or other substrates. In all cases, a drainage plane should be built behind the exterior surface, and must incorporate a weather-resistant barrier (WRB) and flashing.

One particular problem uncovered in the *Rainwater Management* report was a second-floor drainage wall combined with a first-floor barrier wall. Although feasible, proper engineering must be used to combine the two or water will drain inwardly at the second floor level—which is what occurred in many Orlando homes and buildings. Other second-floor drainage problems were caused by stucco sticking to the WRB and the lack—or misapplication—of flashing at the second floor transition. In some cases, the actual reversal of flashing was noted.

Although recommended by most North American window manufacturers, the use of flashing is not universal in hurricane-prone areas and yet it seems to be standard procedure elsewhere. To prevent water infiltration, flexible flashing around the window's perimeter should be integrated with the WRB in weatherboard fashion, in accordance with ASTM E 2112-01, *Standard Practice for Installation of Exterior Windows, Doors and Skylights*.

> "Installation practices often appear to be the blame for most of the water leakage problems."

Another disturbing situation disclosed in the *Rainwater Management* report is the sill condition on first-floor barrier walls. The cast concrete cap is installed with the upturned portion in front of the window rather than behind it, which does not allow water to drain outward at the sill. Should water penetrate the window's perimeter seal or leak through the window, gravity will direct it inside.

Regarding window fabrication, the *Rainwater Management* report suggests that water penetration at corners and at mullions may be a design or quality control issue, which needs to be addressed by the manufacturer. However, installation practices often appear to be the blame for most of the water leakage problems.

The Next Step

The report also raises a question regarding the procedures that AAMA uses to rate window and door performance. Our water resistance rating is based on a rain event that corresponds to a rainfall of 8 inches per hour, reflecting data from the National Weather Service. The pressure used during the water test is based on 15 percent of the design load, with a minimum of 2.86 pounds per square feet (psf), comparable to a 35 mph wind.

Although higher water resistance ratings are indeed possible, they are commonly found on commercial and institutional structures—not homes. Developing products to meet the higher water performance levels for residential construction may prove to be prohibitive in terms of the cost/value benefits to the consumer. Even at our recommended highest water test pressures, the requirements of the 90 to 150 mph wind velocity expected during a hurricane would not be achieved.

When designing products for these kinds of events,

the designer's main goal has been to keep the product in the opening. History tells us that if the glass breaks, the house becomes pressurized, which can result in the roof blowing off.

And so, the question remains: how far should we go in attempting to prevent water damage when a disaster occurs? Even as industry professionals search for answers, there is no question that enforcement of hurricane codes developed in the "Post-Andrew" era—and adhering to recommended installation practices of window manufacturers and the InstallationMasters Institute—will ensure dry, mold-resistant structures under all but "act of God" catastrophic conditions. m

Resources

To view the full *Rainwater Management* report, visit http://www.buildingscience.com/resources/walls/rainwater_management.pdf.

For more information on AAMA, visit www.aamanet.org.

HEALTH

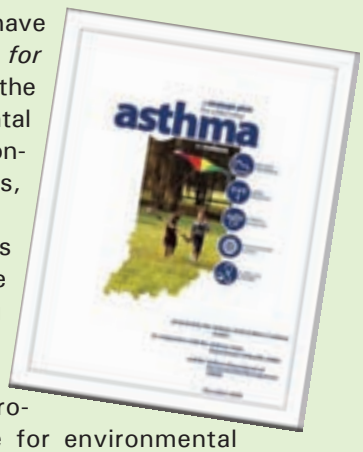
Surgeon General's Office Accused of Issuing Conflicting Message on Mold

Advocate researchers working with the approval of Congressman John Conyers (D-Mich.), the sponsor of "the Melina Bill," which proposes that mold be listed as a hazardous substance, have accused the Surgeon General's office of providing conflicting messages on its stance on mold.

On January 12th and 13th, the office of Richard H. Carmona, Surgeon General of the United States, conducted a two day clinic for public health professionals, titled *Surgeon General's Workshop on Healthy Indoor Environment*. The event, which was conducted at the National Institutes of Health in Bethesda, Md., included panelists from public health agencies such as the Centers for Disease Control (CDC) and the Environmental Protection Agency (EPA), as well as various university and medical researchers. On January 20 the press office of Health and Human Services (HHS), on behalf of the Surgeon General, issued a follow-up media release that critics argued focused solely on the health effects of radon, unlike the clinic.

According to advocate researcher Jonathan Wright, the HHS release appeared to imply that radon was associated with the 160 percent rise in childhood asthma of recent years. Wright pointed out that the EPA's website states, "There is no evidence that other respiratory diseases, such as asthma, are caused by radon exposures." Watchdog groups have called the Surgeon General's follow-up press statement

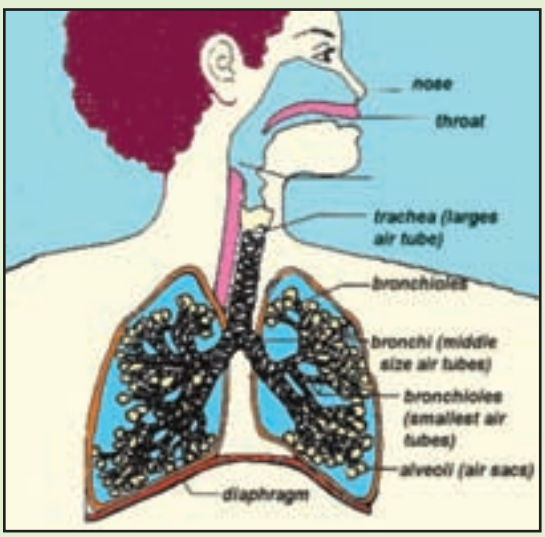
Indiana Health Officials Announce Plan to Battle Asthma



Indiana health and environmental officials hoping to reduce chronic asthma have announced the release of a five-year plan to battle the disease. *A Strategic Plan for Addressing Asthma in Indiana*, released by the Indiana Joint Asthma Coalition, the Indiana State Department of Health and the Indiana Department of Environmental Management, sets several goals for reducing asthma, including reducing environmental hazards—particularly dampness—that contribute to asthma in Indiana homes, rental properties and commercial buildings.

According to a news release from the Indiana State Department of Health, dampness is a major contributor to the presence of environmental hazards including mold, house dust mites and cockroaches, all of which can lead to an asthma attack. Reducing dampness was cited as an important step in lowering occurrences of asthma.

The new plan puts an emphasis on surveillance and broad-based education, including the distribution of education materials, technical assistance and the promotion of an educational website for environmental hazards. According to the report, education alone cannot address the basic lack of resources needed to reduce environmental hazards, such as mold-infested flooring and walls or intrusion of water into living spaces because of a lack of gutters and downspouts.



As part of the plan, the state hopes to, among other goals, identify Hoosiers who are at greatest risk for developing asthma; develop technical materials to educate those people in a position to reduce exposure to hazards that trigger asthma; evaluate and update related regulations, standards and programs; and build local health department capacity to identify and reduce environmental and work-related hazards for asthma. The plan will also look at creating and enforcing programs to reduce dampness, mold, cockroaches, dust mites and other hazards in homes, schools, child care facilities, commercial buildings, offices and workplaces.

www.in.gov/isdh/programs/asthma/index.htm.

on the event proceedings deliberately misleading.

Wright added that presenting researchers at the event made statements that mold presents no human health risks. In particular, the study released by the Institute of Medicine, *Damp Indoor Spaces and Health*, and its follow-up press release, came under fire. Dr. Noreen Clark, chair of the study, was one of the presenters at the summit. Dr. Clark stated, among other points, that indoor molds were not found to have an association to serious disease symptoms as has been widely reported. According to Wright, the study's follow-up press release failed to convey that the study was only charged to investigate allergic and non-infectious respiratory symptoms of fungal exposure, and that their findings never included other serious symptoms.

"The Institute of Medicine study does not reflect what we are seeing in calls to my office," said Joel Segal, public affairs director for the office of Congressman Conyers. "We are receiving complaints from people who have experienced lung and organ damage, permanent neurological problems and fatigue symptoms that are functionally disabling after mold exposures in their homes. We've had more calls on this than any other single issue, including universal health care—since sponsoring HR 1268, we have been receiving at least 10 calls per day for the last three years from victims who are displaced, calling from motels, sick and living in cars."

A news release from the Indoor Air Quality Association (IAQA) added that while the Institute of Medicine's study found no science to establish a clear, causal link between mold and adverse health effects, the study did not rule out that such a link exists.

Montreal Hospital Suspects Mold, Construction Involved in Infant's Death

Montreal's Sainte-Justine University Hospital Centre (UHC) confirmed the death of a premature baby as a result of a fungus infection, but has not determined that construction taking place in the unit led to the infection.

Norman King, a Montreal public health epidemiologist, told Canada's *CTV* that the first phase of the investigation now underway at the hospital is aimed at pinpointing the kind of fungus in question.

"The first step is to identify the type of mold involved, then they have to do air testing to see if the mold that was involved can be found in the air," King told *CTV*, adding, "no one knows, as we now speak, what the final result is."

A statement issued by the hospital said, "Concerning the construction that's being done near the unit, the hospital's administration considers it premature to link it to this event."

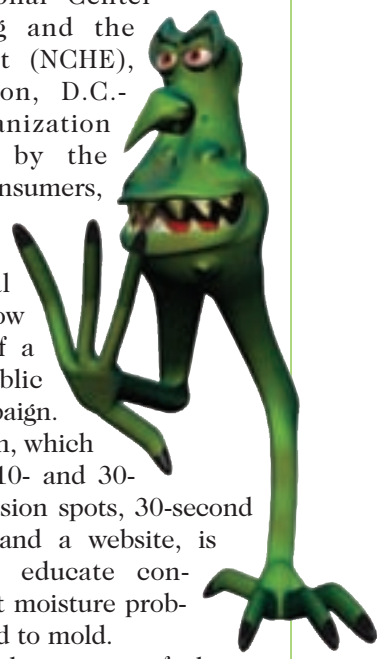
The construction work is part of a complete renovation of the neonatal unit that will be carried out according to the new standards in the field. The Quebec government recently allocated $20 million to finance the project.

According to *CTV*, if mold is identified as a factor in the baby's death, Ste-Justine will join the growing ranks of Quebec hospitals where mold has threatened patients' health. At least five hospitals in Montreal alone have attributed patient deaths to the presence of aspergillus mold. Despite the apparent shortcomings of ventilation systems designed to reduce the presence of mold, King said such infections are, "extremely unfortunate, but rare events."

In 2002, the city's health department published a guide aimed at reducing the spread of mold during construction work.

SPOTTED

NCHE Launches Mold Public Service Campaign



The National Center for Housing and the Environment (NCHE), a Washington, D.C.-based organization established by the NAHB for consumers, announced at the 2005 International Builders' Show its launch of a mold public service campaign. The campaign, which will feature 10- and 30-second television spots, 30-second radio spots and a website, is intended to educate consumers about moisture problems that lead to mold.

The central message of the campaign is that moisture, not mold, is the problem, and preventative measures can be used to avoid damage caused by mold. Many builders at the January trade show mentioned that they felt that homeowners did not know enough about their responsibility in preventing mold growth.

NCHE has conducted three focus groups to determine how best to reach consumers with this campaign. The final animated product is the result of a year of study and creative work with consultant CACI Technologies Inc. According to the

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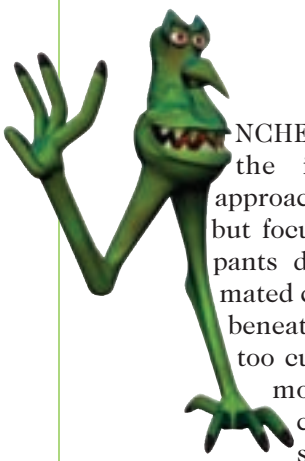


NCHE's newsletter, the initial creative approach used humor, but focus group participants deemed the animated creatures lurking beneath a leaky sink too cute. The revised, more destructive characters were still found to be humorous, but focus groups participants said they were more motivated to visit the web site.

➡ **www.stopmold.org.**

DIY Network Brings in Builders to Address Mold

The Do-It-Yourself (DIY) Network has launched a new program, *Healthy Household Workshop*, to help homeowners create a healthy living environment. Problems with mold and mildew, dust, chemicals and synthetics are being addressed by the five-part, half-hour television show, which premiered March 14, 2005.

For viewers planning a remodeling project or building a new home from the ground up, *Healthy Household Workshop* is intended to offer information and demonstrations on ways to make a cleaner, healthier environment in which to live. Fuad Reveiz, former Minnesota Vikings kicker and president of the construction and development company Reveiz and Co., hosts the show. Reveiz is an American Lung Association (ALA) Health House registered builder and he is currently building the first subdivision in the Southeast recognized by the ALA as a Health House Community.

➡ **visit www.DIYnetwork.com.**

Photo provided by: Charles Brooks

Fuad Reveiz will host DIY's *Healthy Household Workshop*®.

COMPANY NEWS

G-P Gypsum Helps Re-create a Home on TV's Extreme Makeover

Two of Atlanta-based G-P Gypsum's products were featured on ABC television's *Extreme Makeover: Home Edition*, on an episode that aired January 23, 2005.

Filmed and constructed in one week in December 2004, the show helped to create an entirely new home for the Sears family in Martinez, Calif. The home's interior featured G-P Gypsum's DensArmor™ Plus interior wall panels and DensShield® tile backer.

The Sears family was chosen because Jhyrve Sears, the 17-year-old daughter of a single mother, has Krabbe Disease, a rare degenerative disorder that affects the nervous system. After Jhyrve underwent extensive chemotherapy, her doctors advised that she not return home until the family's home in California provided a sterile environment not easily susceptible to mold growth and other assorted infestations.

When *Extreme Makeover: Home Edition* learned of her situation, the show's design team and hundreds of workers, led by show host Ty Pennington, worked together to construct a brand new home in less than a week. G-P Gypsum donated thousands of dollars in resources to ensure that the new home provided a comfortable and safe living environment. To meet doctor's orders, DensArmor Plus and DensShield from G-P Gypsum were expressly specified for the project because of the products' mold- and moisture-resistant qualities.

G-P Gypsum's DensArmor Plus was specified for this home's extreme makeover.

"We were honored to be part of such a great endeavor that helped such a deserving family," said Chris Beyer, national marketing manager for Georgia-Pacific Building Products. "We believe in the work and message of *Extreme Makeover: Home Edition*, and we are proud to support its mission. G-P Gypsum was a natural choice for this project, as we strive to provide construction professionals and homeowners with innovative building solutions. Our DensArmor Plus and DensShield products utilize the highest level of building technology and we were happy to have had the opportunity to make a lasting contribution to the improved living conditions of this family."

➡ **www.gpgypsum.com.**

NEW Mold Awareness Training Available
Live, Instructor Led "Online"

Under contract from The Indoor Environments Division (IED) of the U.S. Environmental Protection Agency (EPA), the Environmental Education Foundation, with the support of the largest group of industry representatives ever assembled, has developed a New training program that focuses on a total risk management program for IAQ - Including Mold Management & Water Intrusion and the implementation of an Operations & Maintenance (O&M) Plan.

The EEF training, combined with ongoing support as an EEF member and NEW O&M plan are now being used by many major insurance carriers to meet certain underwriting requirements to obtain IAQ-related insurance.

For More information on availability of "on-site" or "on-line" training,
- or to join the EPA Advisory Group - contact:

Environmental Education Foundation

www.enviro-ed.org 888-212-7211 info@enviro-ed.org

Advisory Group Members Include:

Environmental Education Foundation

PNC Real Estate Finance

NATIONWIDE: Law to Curb Class-Actions, Not Necessarily Mold Lawsuits

The first bill of 2005 to be signed into law by President Bush, the Class-Action Fairness Act, may curb class-action lawsuits, but it is unlikely to greatly affect mold cases.

According to a statement by the president, the new law moves most large, interstate class-actions into federal courts to prevent trial lawyers from shopping around for friendly local venues. The bill also provides safeguards to ensure that plaintiffs and class-action lawsuits are treated fairly.

Alvin Lodish, a partner in the litigation department of the Miami-based law firm Bilzin, Sumberg, Baena, Price & Axelrod, explained that although there are many class-action cases related to mold, most of them are inherently based in state.

"Generally speaking, it's not going to affect mold cases," Lodish said.

Only in court cases against large apartments or office complexes owned by an out-of-state entity would the new law be likely to come into play. Even then, the cases would have to have 100 plaintiffs, with total damages reaching $5 million—the new number set by the act—before defendants and plaintiffs would have the option of moving into a federal court.

"It is a change but not as big as some people think," Lodish said.

HAWAII: Hilton Sued for Undisclosed Mold in Hawaii Hotel

Guests who stayed in part of the Hilton Hawaiian Village in Waikiki between June 14 and July 23, 2002, are suing the hotel for not disclosing a mold problem during their stays. More than 1,000 plaintiffs filed the class-action lawsuit in December 2004.

Eurotium mold, a type of aspergillus, was discovered in the hotel's 453-room Kalia Tower in June 2002 and the tower was shut down for remediation in July. The hotel, which was only a year old at the time the mold problem was discovered, renovated Kalia Tower at a cost of approximately $55 million and reopened it in September 2003. The plaintiff's lawyers argue that guests should have been informed about the presence of the mold and given the option of staying in another part of the hotel. Personal injury claims are not a part of the suit.

Lawyers for the hotel, which is suing the tower's architect and contractors, said they were told the mold was relatively harmless and experts believed the hotel had caught the problem early.

Atlanta-based Air Quality Services was hired to sample the tower's air quality, analyze the mold and perform preliminary inquiries into possible cause, according to *The Honolulu Advertiser*. CH2M Hill, a firm based in Englewood, Colo., was later hired to continue the mold investigations.

According to an article from Honolulu's *Star-Bulletin*, Hilton disclosed the mold problem in July 2002 and was immediately hit by union complaints that mold had been found in Kalia Tower rooms as early as March. The article reported that Hilton also found mold in its time-share Lagoon Tower, but it was isolated to corridor ceilings on the third floor.

Mold Dispute to be Basis for Supreme Court Decision

The U.S. Supreme Court announced in February that it will use a renters' lawsuit claiming personal injury from toxic mold in apartments to clarify when plaintiffs can sue in federal or state court.

The case in question does not involve a class-action lawsuit, as addressed by President Bush's recent Class Action Fairness legislation (see story above). Rather, the decision will be used to clarify what determines a corporation's "citizenship" in both individual and class-action lawsuits when a company has subsidiaries in multiple states.

At issue is whether or not Virginia renters Christophe and Juanita Roche can sue their landlord, Lincoln Property Co., in Virginia state court over exposure to mold in their apartment. The Texas-based company has a subsidiary in Virginia.

In the lawsuit, the Roches allege the mold caused severe medical problems, including chronic headaches, memory loss and respiratory trouble. They also contend that while their apartment was being treated for mold removal many of their valuables were misplaced or stolen.

The U.S. Court of Appeals for the Fourth Circuit in Richmond, Va., ruled that the lawsuit was permitted on the grounds that Lincoln

was a "citizen" of Virginia because its subsidiary conducted business in the state and thus had significant ties there.

COLORADO: Denver Airport Files New Suit

Building upon an unresolved lawsuit filed in July 2003, a new lawsuit filed in February 2005 claims that Denver International Airport (DIA) has done nothing to stop de-icing fluids and other pollutants from contaminating portions of Concourse B, making many of United Airlines' workers sick and leading to mold growth.

The lawsuit is based on allegations that vapors were released from the pollutants that leached into the Concourse B basement, causing respiratory and other problems in two airline workers. In addition, lawyers say the pollutants led to mold contamination in the building's basement, including United Airlines' locker rooms, training rooms and a mail sorting facility.

"According to airport management there is only one area that may have mold issues and that is the former United training rooms located in the basement level at the east end of the B Concourse," said Denver city attorney Cole Finegan. "These rooms have been closed off for some time and the HVAC system for these rooms sealed since there were complaints to the city of the possibility of mold in the drywall of these rooms. The airport is currently obtaining bids for the demolition of these rooms." He added, "It should also be noted that United no longer de-ices aircraft at the gates except in rare circumstances and in such cases the de-icing fluid is captured and recycled."

The new lawsuit is an effort to compel DIA and the city and county of Denver to clean up the alleged contamination.

According to a 2003 article in the *Rocky Mountain News*, mold problems at DIA have been occurring since 1996, when the first of a series of investigations began. The 2003 lawsuit contained 18 allegations of mold, odor and other indoor air problems at DIA. An inspection by OSHA reported that mold contamination discovered in the concourse basement in 1996 had not been addressed three years later. m

Tropical Mold Forest

Proper Plant Placement can Prevent Problems

by Peter Sierck

Peter Sierck is an industrial hygienist and the director of Environmental Testing & Technology, Inc. He participated in the development of the IICRC standards S500 for professional water restoration and the S520 for professional mold remediation. Peter can be reached by e-mail at PSierck@IAQsurveys.com.

Rancho Santa Fe is one of the prettiest and most sought after locations to live in Southern California. Only the rich and famous can afford to buy property in this area. The climate is mild, mostly sunny and sometimes hot in summer—in short, perfect. Eucalyptus trees and orange groves separate large estates. When you drive by the individual properties you may not even see a structure. Large estates such as these require a lot of organized maintenance with gardeners and other staff working constantly.

The homeowner of one of these beautiful estates noticed a strange odor in one of his first floor guest rooms. However, there was nothing unusual to be noticed in the room or surfaces. The odor was intermittent and a good nose was needed to identify it. Stella, a Jack Russell Terrier trained to sniff out locations with mold growth *(see related article, page 36)*, was brought to the property. Stella indicated mold odors coming from the exterior walls in several rooms of the main house. In the large guesthouse, she indicated mold at all exterior walls. The dog handler visually inspected the accessible areas, however, no visible mold growth was found.

Lush vegetation hid the beginnings of wood rot on this French door.

Confusion arose, since the odor was confirmed but no source was found. A scientific building evaluation appeared to be the next logical step. An indoor air quality testing company specializing in mold and moisture investigation was hired.

The visual inspection of the exterior revealed extremely lush tropical vegetation very close to and along many of the exterior stucco walls. The soil was soaking wet around the perimeters of the structures. On this particular summer day, the outside temperatures reached 90° Fahrenheit.

Sprinkler overspray patterns were visible on the stucco, causing some of it to flake off. Wood rot was noted at the base of the French door casings. Brick stone veneer was present in some areas. Rain gutters were missing and the site drainage system was questionable.

Hypothesis Tested

The inspection of the interior confirmed the dog handler's findings that there were no areas with visible mold growth in the main or guesthouse, although a mold odor was definitely present in the entire guesthouse. The hypothesis: hidden mold growth in the exterior wall cavities due to the excessive amount of water load from the exterior.

To challenge the hypothesis, a number of spore trap air samples were collected from exterior wall cavities through the electrical outlets. The laboratory analysis uniformly showed spore counts in the 1 to 2 million range with predominance (>90 percent) of penicillium and aspergillus type spores. These results warranted destructive testing at the exterior walls.

Some low level mold growth on surfaces was also suspected in the guesthouse and confirmed with laboratory analysis. A closer inspection showed patches of mold growth on soft fabric furnishings.

Baseboards were removed in selected areas and small exploratory cut-outs were made into the drywall. Mold growth was present on the back side of the baseboards and on the bottom section of the walls. The back sides of the drywall cut-outs also show significant mold growth.

The residents stayed in the home while the mold remediation was conducted. To protect the interior environment, local containments with a negative pressure differential were erected. The decision was

made to remediate the guesthouse with a full containment. The drywall and insulation material was removed and replaced up to four feet high. During the removal process, deterioration of the building paper was detected in some areas. This required the removal of the exterior stucco to re-install a continuous drain plane membrane. After being cleaned via HEPA vacuuming and damp wiping, the containment work areas were tested and cleared for mold levels. Reconstruction of the interior could start, but the original water intrusion problem had not been yet been addressed.

This guesthouse was not so inviting when mold was the visitor.

If They Had Only Known

It is of the utmost importance that all the water intrusion sources are identified and eliminated to prevent a recurrence of moisture damage and subsequent mold growth. Tropical plants require tremendous amounts of water and should not be planted close to a structure. Local drought-resistant plants require far less water and can be a beautiful substitute in xeroscape landscaping. Sprinkler system overspray should never hit the exterior building envelope because eventually moisture will migrate through the building paper and it will cause material deterioration. Drip-irrigation systems are a good substitute and will dramatically reduce the amount of water delivered to the plants and the structure. Rain gutters diverting the water away from the structure and a properly functioning site drainage system should be installed.

Guesthouses are especially problematic and notorious for mold problems. They are infrequently occupied and therefore not heated in the winter nor ventilated in the summer. This can easily cause a high moisture load indoors causing xerophillic fungi to grow on surface materials. Many of the soft fabrics furnishings in this guesthouse had to be discarded due to the confirmed presence of active surface mold growth. A thorough deep-cleaning of all remaining surfaces was performed and the carpet and padding was replaced. A dehumidifier was installed in the ventilation system and the system is now controlled by a humidistat and thermostat. This will insure that a certain relative humidity level is not exceeded and adequate temperatures are maintained.

If these homeowners had known, they could have saved a few hundred thousand dollars. Different plants, a landscaping and watering schedule, proper roof and site drainage and regular heating and ventilation would have prevented all these troubles. m

The mold growth, indicated by a strange odor and subsequent air samples, was fully revealed once the baseboard was removed.

IN ACTION

Global Prevention Services Awarded Contract with GSA

Global Prevention Services Inc. (GPS), a mold remediation and prevention company based in Scottsdale, Ariz., announced that it has been awarded a contract with the U.S. General Services Administration's (GSA) Federal Supply Schedule (FSS) for mold removal and prevention services. The GSA contract has a five-year term that allows purchasing agents and real property managers, to identify, consider and procure GPS's services through the FSS electronic purchasing system, GSA Advantage!™

"Our experience and success with our patented and EPA-registered products and services for mold removal and prevention in the public and private marketplace has created this opportunity for us to serve GSA," said Michael Himelfarb, chief executive officer of GPS. "This contract covers all fifty states, with project authority up to $750,000 with automatic approval."

www.nomold.com or call 877/666-6535.

LVI Services Offers Post-Tsunami Environmental Cleanup

LVI Services, based in New York City, has announced its participation in the environmental cleanup and recovery from the earthquake and tsunami that devastated Indonesia and coastal areas of Asia and east Africa in December 2004. LVI is an environmental services and restoration firm that specializes in quickly mobilizing a work force to respond to major natural and man-made disasters involving cleanup, water damage restoration, drying and dehumidification, demolition, hazardous material remediation and infection control.

"The loss of life, human suffering and structural devastation from the Asian tsunami are almost impossible to fathom," said Burton T. Fried, president. "Like everyone else, our organization of emergency responders is humbled by the awesome power of nature. Full recovery from this tragedy will take many years."

Once the initial rescue and emergency response efforts are complete, Fried says that he expects two main types of cleanup and recovery projects. "Soft" demolition, cleanup and repair will involve removing badly damaged building materials, salvaging what can be saved, cleaning up building interiors and addressing any mold problems. Large-scale demolition and reconstruction will also be necessary, since many buildings in coastal areas in particular are a total loss. Any remaining structures must be demolished and the debris cleaned up before rebuilding can begin.

According to the news release, the company's experience in responding to hurricanes in Florida during 2004 and the December 2002 super typhoon Pongsona on Guam will be especially relevant to the current situation in Asia. In Florida LVI helped a large school district recover from $30 million in damage caused by three hurricanes in six weeks. On Guam, LVI completed a 10-month, four-phase cleanup of extensive water and mold damage at an upscale resort in the Tumon Bay tourist area.

www.lviservices.com or call 212/951-3661.

EMG Contracted for $10M Healthcare Facilities Restoration Project

As a result of structural wreckage and looming water intrusion problems created by last year's hurricanes, EMG Corp. of Hunt Valley, Md., was contracted by a worldwide global financial services firm to manage a $10 million facility restoration project for four senior living facilities in Florida.

Throughout the next few months, EMG will oversee the construction and restoration of four three-story buildings covering 760,000 square feet. The company will manage all project negotiation and construction work as well as counsel the client about indoor air quality assessments and mold samplings to ensure proper remediation.

"The retirement facilities that EMG is consulting with faced significant roof, interior and exterior damage—all precursors to major moisture and mold problems," said Jeff Boggs, senior vice president of EMG. "EMG's proactive approach to correcting these problems is critical in preventing unsafe air quality conditions for the residents and employees living and working in these buildings."

EMG has been working with construction contractors and the facilities' building management team to devise a

comprehensive work schedule for the project. The company is also supervising the implementation of preventative measures, such as resealed windows and HVAC units.

Executives at EMG expect the project to be completed by June 2005.

www.emgcorp.com or call 410/785-6220.

COMPANY NEWS

New England Opens First AIHA EMLAP Accredited IAQ Testing Lab

EMSL Analytical Inc., based in Westmont, N.J., has announced that its Wallingford, Conn., laboratory has just received American Industrial Hygiene Association (AIHA) Environmental Microbiology Laboratory Accreditation Program (EMLAP) accreditation. The New England indoor air quality testing laboratory provides microbiological analyses.

"Our laboratory in Wallingford, Conn., allows existing clients and IAQ and environmental professionals access to New England's first and only AIHA EMLAP accredited laboratory. New England has been asking for an AIHA EMLAP accredited microbiological testing laboratory and EMSL has delivered," said Joe Frasca, vice president.

The company also announced plans to add microbiological testing capabilities shortly at its location in Plymouth Meeting, Pa.. The laboratory will act as a service center for clients to pick up microbiological and industrial sampling supplies or drop off samples.

www.emsl.com or call 800/220-3675.

BioScience Clients at Home within 24 Hours of Treatment

BioScience Environmental Services and Laboratory Inc., a remediation service based in Northboro, Mass., announced that its scientists have developed an environmentally safe proprietary enzyme formulation, TM-100, which its says breaks down and digests mold. OSHA performed a volatile organic compound (VOC) test on the product and found it to be safe for humans and pets. A toxicology report was performed by GZA Environmental. The five enzymes used are on the FDA's Generally Regarded As Safe (GRAS) list.

Currently the company is offering its services to victims of last year's hurricanes in Florida. According to a company news release, the treatment has allowed homeowners, condo associations, commercial owners and property managers to return to their properties within 24 hours of treatment.

www.bioscienceservices.com or call 866/463-2511.

INDUSTRY NEWS

Detroit Air Traffic Controllers File Grievance over Mold Remediation

Air traffic controllers at Detroit Metropolitan Airport have announced plans to file a grievance with the Federal Aviation Administration (FAA) over a mold remediation problem that forced the evacuation of a control tower, according to an article in the *Detroit Free Press*. Nearly a dozen air traffic controllers were evacuated from the tower for five hours on January 22 after they were allegedly sickened by fumes from a chemical being used to remove mold.

The mold was found on the fourth and ninth floors of the tower, although the workers who became sick were all on the top floor. At one point the FAA ordered the air traffic controllers to return to the tower, but two controllers became ill upon entering the building. The FAA then moved the workers to an older tower until the air in the newly-remediated tower was tested and deemed safe.

"We believe the safety of the workers, the air traffic controllers and the flying public was jeopardized," said Vince Sungent, president of the Detroit branch of the National Air Traffic Controllers Association, in the article. "It's a huge, huge safety issue."

Tony Molinaro, a spokesperson for the FAA, said the public was never in any danger because flight arrivals and departures could have been delayed and other facilities could have handled flights that were in the air. In addition, there were controllers on other floors of the tower who weren't affected by the chemicals and continued to work.

According to the article, eight workers sought medical care after the incident, with complaints of vomiting, nausea, lightheadedness and respiratory distress.

ANTI-MICROBIAL COATINGS

SEI Chemical Unveils New Product Line

A new line of mold prevention and remediation products for residential and commercial buildings has been introduced by SEI Chemical, a specialty chemical formulator and manufacturer based in Northridge, Calif.

SEI's mold prevention/remediation product line includes seven different products tailored to meet mold preventative and disinfectant needs, including mold preventative and disinfectant sealer sprays; mold and odor eliminating stain sealers; mold-resistant primer coatings; and long term non-stick mold- and mildew-resistant coatings and paints. According to a company news release, the products are inexpensive, environmentally- and user-friendly and long lasting.

These specialty products can be applied to refrigerated food storage areas and processing facilities, marine vessels, aerospace facilities, hospitals, historical monuments, public fountains and building facades and need to be applied once every 30 years, according to the company.

www.seichemical.com or call 818/998-3538.

CIA Offers Warranty on AEGIS Microbe Shield

The Certified Indoor Air (CIA) Group of Fountain Inn, S.C., is offering its AEGIS Microbe Shield to control mold, mildew, fungus and bacteria. The EPA-registered antimicrobial coating is designed to inhibit the growth of mold on surfaces to which it is applied. According to company information, the colorless, odorless product kills microbes on contact by physically rupturing microbes followed by an electrical shock. Protection lasts the life of the surface to which it is applied and the company offers a 10-year warranty.

The company says that the product has been used for 27 years in schools, homes, hospitals and other buildings, and is also found in everyday products such as textiles.

www.theciagroup.com or call 877/977-8686.

Thompson's Co. Deck Stripper Removes Fungus Stains

The Thompson's Co. of Upper Saddle River, N.J., has launched a new deck cleaner capable of removing dirt, mildew, algae and fungus stains. The new Thompson's® Water Seal™ maximum strength deck stripper was formulated to remove oil and water-based solid stains as well as hard-to-remove semi-transparent stains and waterproofers.

The company's new deck stripper is ready-to-use and fast-acting, working in a matter of minutes. The product can be applied with a synthetic bristle brush or roller or sprinkled on from a plastic watering can. After 10 to 15 minutes has elapsed, the surface is scrubbed with a synthetic, stiff bristle brush and then rinsed clean with a garden hose or pressure washer. The product is available in a one-gallon size, which treats approximately 150 square feet depending on the condition and porosity of the wood. The formula can be used on all types of outdoor wood and on wood plastic composite decks.

www.thompsonswaterseal.com or call 800/367-6297.

Specialty Coatings Co. Introduces SAM

Research personnel with Specialty Coatings Co. of Elk Grove Village, Ill., have formulated a line of super series antimicrobial (SAM) coatings. The coatings were designed to provide defense against microbes and germs in clean rooms, surgical rooms, modular partitions, appliances, food processing/storage and other hygienic applications, as well HVAC applications where bacteria, mold and mildew are chronic health risks.

According to a company news release, SAM coatings contain a specially formulated compound containing a zirconium-phosphate-based ceramic, silver-bearing ion-exchange resin. The inorganic compound prevents the reproduction of microbes on contact and is designed to last the life of the coating. The SAM compound is non-migratory and non-toxic, and is FDA approved. The active components in SAM coatings are registered with the EPA-TSCA and ELNCS.

www.specialty-coatings.com or call 800/782-2400.

Fiberlock Technologies Offers EPA-Registered Coating

Fiberlock Technologies, located in Andover, Mass., offers AfterShock™, an EPA-registered antimicrobial coating designed to kill residual mold and mildew remaining after pre-cleaning contaminated surfaces. AfterShock also inhibits the future growth and spread of mold and mildew on the cured film surface. Designed for residential and institutional buildings, the manufacturer says this durable, 100-percent acrylic sealant offers can be used on interior wall surfaces as well as on interior wood framing, primed metal, concrete and wallboard inside the wall cavity.

www.fiberlock.com or call 800/342-3755.

BBJ Cleans Hard Surfaces of Microbial Contamination

Mold and Mildew Remover from BBJ Environmental Solutions Inc. of Tampa, Fla., combines the germ-killing ability of a disinfectant with a cleaning agent to remove mold and mildew. It disinfects and cleans hard, non-porous, inanimate environmental surfaces such as air-conditioning vents, grilles, diffusers and other hard surfaces where microbial contamination may accumulate. The mold and mildew remover is effective against a broad range of disease causing organisms, yet harmless to equipment. According to the manufacturer, it will not stain or blemish most fabrics. It is suitable for cleaning and disinfecting surfaces outside the system and internal surfaces to be treated and rinsed off. It is also useful for ensuring that microbial contamination is not moved from job to job by spraying tools, shoes, gloves, etc.

www.bbjenviro.com or call 800/889-2251.

PAINTS

New ICI Paint Part of *This Old House* Team

ICI Paints, based in Strongsville, Ohio, has launched its *This Old House*™ paint. The paint is formulated with a blend of raw materials to provide resistance to mildew and algae growth.

According to a company news release, the paint developed from new technology and feedback provided by the *This Old House* team. The technology features a blend of SmoothCote modifiers, a network of urethane polymers intended to enhance the paint's application abilities and finished appearance. The result is a balance of sag resistance and flow that provides a professional-looking, even finish that hides brush marks and

minimizes surface imperfections. Once cured, the paint forms a flexible, protective barrier to provide ongoing protection in harsh weather conditions.

The paint is available in three sheens: flat, satin and semi-gloss. The line features 320 colors, 33 of which are marked as "historical" to reflect hues that closely match colors that were popular in the early twentieth-century.

www.thisoldhousepaint.com or call 866/TOH-4544.

DAP Basement Paint Offers Guarantee for Anti-Microbial Protection

Baltimore-based DAP's Kwik Seal Plus™ basement paint with Microban® antimicrobial product protection was designed to beautify and protect concrete and masonry walls. With a guaranteed waterproof seal fortified with Microban protection, the new paint guards against stain- and odor-causing bacteria, as well as mold and mildew growth on the paint film.

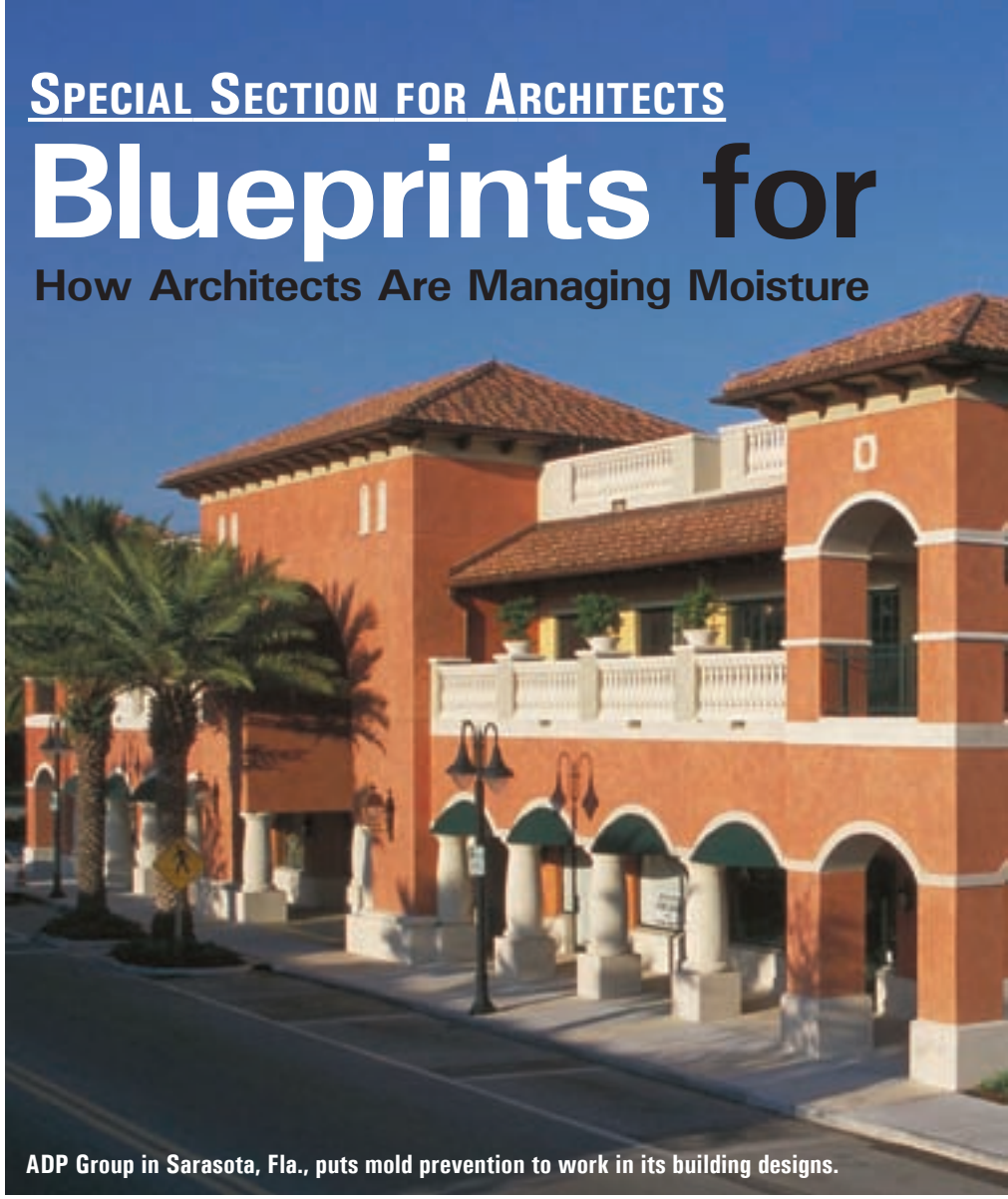
It has a ready mixed, latex-based formula that is easy to apply with a brush or roller. It features high stain coverage, low odor and, because it is latex-based, it cleans up with water. Its waterproof guarantee includes resistance of up to five pounds per square inch of water pressure. The paint is suitable for interior or exterior concrete, stucco, brick, cement block, masonry surfaces, garage walls, retaining walls, birdbaths and residential fountains. It comes in bright white, which can be used as is, as a primer, or tinted to virtually any pastel color, as well as two new colors, beige and grey. The paint is available in 1.0- and 3.5-gallon buckets.

www.DAP.com or call 888/327-8477.

Special Section for Architects

Blueprints for

How Architects Are Managing Moisture



ADP Group in Sarasota, Fla., puts mold prevention to work in its building designs.

by Alan B. Goldberg

It may not sound like much, but through simple observation at a job site—to see if building materials are protected from the elements or if the building cavity is clear of debris—moisture problems can be prevented. But that's just one part of prevention. Architects, too, in the very first steps of the building process, are becoming more significant as one level of prevention in the chain that begins with building design and ends with a successfully constructed structure.

According to Myles Glick, AIA, of Glick Boehm & Associates Inc. based in Charleston, S.C., success in preventing moisture problems is based on good design, good construction practices and effective materials.

"The key is to develop a good system within the building envelope so that whatever moisture enters the building is managed … through water spaces and an effective barrier system. Water is going to enter the building. How it is managed so it doesn't build up and create an environment for mold and mildew is the essence of what we do," he said.

Kent Calloway, an architect with The Renschler Co. of Madison, Wis., added that close attention to detail is the best way to prevent moisture problems.

"The process starts on the [drawing] boards and works its way to the construction site," said Calloway. "And every step along the way, specifications must be clear, details must be followed and both sides of our business must work together so we do not have an issue."

Good design, detailed specifications, products that inhibit mold growth and good communications with contractors can make the difference between a building that is clean and one that will require remediation.

Success Based On Good Design

If success is based on good design, a basis for good design lies, at least in part, in the details.

For Robert Alexander, principal of Alexander & Keinst Inc. in Dallas, the key detail in preventing moisture buildup is a two-inch air space between the outside wall and the substrate. A mesh system used in the cavity will allow air to flow. It helps keep the cavity open, allowing any water to drain through the mesh and out through weep holes. The mesh actually allows the weeps to stay vented.

"The cavity area must be kept clean, and in our meetings with contractors we stress what can happen if there is water intrusion. Water is the architect's worst enemy when you consider all the consequence of its intrusion," said Alexander.

Nick Tocheff, an architect with Fox & Fowle Architects in New York, also emphasized the use of a cavity that allows water to flow down and drain through weep holes.

"This is pretty much the standard that is followed," said Tocheff. "It goes beyond good practice. In theory, the cavity should keep things dry."

Calloway pointed to vapor retarders as an example of specifics that require attention.

"The vapor retarder must be sound. In other words, it has to be continuous and complete. Areas where the wall meets the ceiling or around electrical conduits or any place where there could be a break become critical locations to check."

Calloway added that a vapor retarder under a concrete floor slab is going to be especially important in an office building as opposed to in a warehouse where there is a high occupancy load.

Drier Building

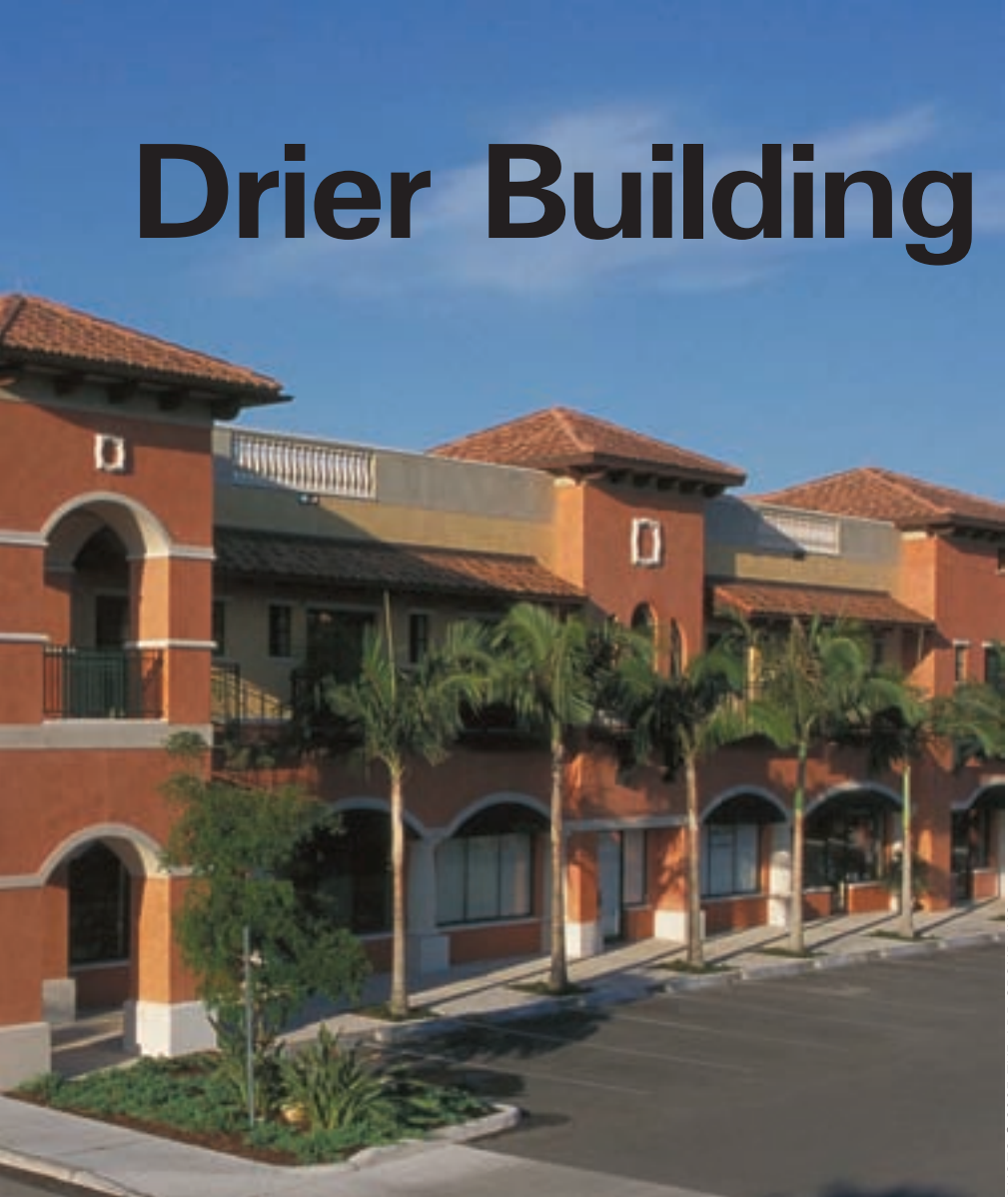


PHOTO © 2005 THE ADP GROUP, INC.

Proper ventilation through good design is another solution for the prevention of mold and mildew, according to Mark Silva of Silva Studios in San Diego.

"Our work is residential and to our way of thinking, all areas of design must take ventilation issues into consideration," said Silva.

Specifying the Latest Products

When looking at the details of design, the products clearly play a critical part. These days, architects are placing greater emphasis on specifying products for builders, specifically those products that will work with the design to keep moisture from damaging a building.

"We keep up with changes in the industry whether it is new products or new ways to deal with mold and mildew," commented Alexander.

Alexander said one new product being used is a flashing system that has worked very well for his company.

"We use flashing around window sills and where we have parapets. It is part of our quality control and we are very diligent about that."

A trowelled-on waterproofing membrane is another new product that is being specified.

"This membrane is one of our most successful products," said Alexander.

The use of materials that will not sustain mold under repeated exposure to moisture is a good way to prevent mold from developing in damp areas such as showers, basements and exterior walls, explained Tocheff. One example, he said, is mold- and mildew-resistant sheet rock.

"There are places [bathrooms, showers] where we use certain type of products in wet areas that do not support growth," said Lynn Javoroski, an associate with Hammel, Green & Abrahamson Inc. based in Milwaukee, Wis. "We are constantly looking at new materials that have a fungicide or some ingredient that will prevent mold from growing."

However, Stephen Springs, an architect with Brinkley Sargent Architects of Dallas, said his firm generally avoids using any organic products, such as cellulose insulation, as a way of preventing mold. Organic materials serve as a food source for mold.

"We will even avoid some organic products that claim to be moisture-resistant because most have been treated with chemicals, which bring with them their own indoor air quality concerns," Springs said.

EGNER Architectural Associates LLC of Ithaca, N.Y., does a lot of work with laboratories and, according to Phillip Albrecht, a principal architect with the firm, much of the flooring used is sealed concrete, special coatings, ceramic and VCT.

"These buildings must be very clean especially when we are working with sheet rock. We are very aware of the products we specify in terms of mold-resistance."

In certain regions of the country, such as areas with high humidity, the use of certain materials is critical in preventing mold and mildew.

"We have one of the worst conditions in the country along the Gulf Coast, with over 65 inches of rain each year," said Samuel Blimling, a founding principal with DAG Architects Inc. in Destin, Fla. "In our condominiums, we must use vapor barriers to keep moisture out. Contractors are using 'green' board because of the time lapse between installation and the start-up of air conditioning equipment, which helps to minimize any damage from mold.

continued on page 28

AIA Architects Imagine, Create and Transform

The American Institute of Architects (AIA) 2005 National Convention and Design Expo is being held May 19-21 at the Mandalay Bay Convention Center in Las Vegas. The convention, which will this year focus on the theme "The Power of Architecture: Imagine, Create, Transform," brings together more than 20,000 architects and industry professionals and more than 800 exhibitors. More than 185,000 square feet of new products, technology innovations and services will be represented at the expo.

Learning about new products is one thing, but learning about new design practices and gaining continuing education credits is another facet of the convention. More than 160 continuing education sessions look at topics such as writing contracts, dealing with liabilities and growing your business. Open forums will also be held on topics including building science and the center for communities by design. Below is a brief look at some of the seminars that may stand out to **Moldmag** readers.

Show Hours

Thursday, May 19	9:30 a.m. – 5 p.m.
Friday, May 20	10 a.m. – 5 p.m.
Saturday, May 21	10 a.m. – 3 p.m.

AIA Seminars

Friday, May 20, 2005

FR13 Negotiating Contracts: Responding to Client-Generated Risks

8:15 - 9:45 a.m.

Meets AIA/CES criteria for Health, Safety and Welfare (HSW) issues; Best of 2004 convention programs.

Professional service agreements constitute the foundation for private architecture practice. This seminar will examine twelve of the most egregious provisions identified by the AIA's Commended Program of professional liability insurance, the risks they generate, and the alternatives available in contract negotiation.

Presenters: Joseph H. Jones Jr., AIA, and Frank Musica, Assoc. AIA, Victor O. Schinnerer & Company Inc.

FR43 Potential Liability in Residential Design: Risks and Solutions

4 - 5:30 p.m.

Meets AIA/CES criteria for Health, Safety and Welfare (HSW) issues.

Residential design, from single-family homes to hotels, generates professional liability risks. Many architects understand that condominium projects are high-risk projects but few understand the threat such projects present. This seminar will explore the direct and vicarious liability risks and ways to mitigate these risks.

Moderator: Edward M. Hord, FAIA, Hord Coplan Macht LLC

Presenters: Katherine D. Enos, Assoc. AIA, Victor O. Schinnerer & Company Inc.; Judy L. Mendoza, Victor O. Schinnerer & Company Inc.; Sandord P. Steinberg, AIA, Steinberg Design Collaborative LLP

Saturday, May 21, 2005,

SA28 Get the Mold Out! Preventing Mold Growth in Your Architecture

4 - 5:30 p.m.

Meets AIA/CES criteria for Health, Safety and Welfare (HSW) issues.

This seminar will discuss best practices in building science and design to prevent mold growth in buildings—particularly green buildings—by preventing leaks and managing moisture. It will also focus on practical strategies from design through construction phases and HVAC system.

Presenters: Chris Decareau, AIA, Simpson Gumpertz & Heger Inc.; Ned Lyon, PE, ASHRAE, Simpson Gumpertz & Heger Inc.

> "Water is the architect's worst enemy when you consider all the consequences of its intrusion."
> —Robert Alexander, principal of Alexander & Keinst Inc.

We work closely with mechanical engineers to be sure air is properly conditioned and we specify dehumidifiers for every unit."

Architects in the Southwest face similar conditions.

"We specify products based on their mold resistance," said Mike Hampton, principal of Womack + Hampton Architects LLC in Dallas. "Wherever we can, we try to specify firewalls with fiberglass-faced coreboard."

He explained that wooden firewalls can be susceptible to mold and that is why materials with fiberglass are preferred.

"We are trying to eliminate the use of paperboard products. We are getting away from using cellulose products that do not resist mold," said Hampton.

Job Site Issues

According to Glick, a particularly vulnerable area of the construction process is in workmanship and the absence of close supervision.

"Most often, a breakdown can be traced to the guy who is making the least amount of money, who may not have followed instructions," said Glick.

"Part of our standard practice is that we are at the site one to two times a month to be sure the job is being done according to our specifications," added Spring. Part of the reason for that is that, as of 2004, the state of Texas requires that construction administration be performed by any architect on any project designed by an architect.

Tocheff also agreed that workmanship is a very important factor.

"There have been occasions when mortar droppings due to careless brickwork would clog the weep holes at the bottom of the cavity, preventing infiltrated water from draining to the outside. Also, poorly installed flashing within the wall could allow water to travel to the inside."

Calloway said one of the goals at

the site is to get the structure enclosed as quickly as possible so the weather does not have an effect on the various building materials. According to Javoroski, at the job site responsibility for making sure materials are protected rests with the general contractor.

"As far as site issues, it is up to the general contractor to see that drywall is not put up before the building is enclosed," said Javoroski. "That doesn't mean we can't point out a potential problem that could lead to a mold issue further in the process. The bottom line is that we are extremely cautious about preventing any possibility of growth."

"I may warn a contractor about exposing materials to the elements, but, ultimately, that is his responsibility," added Albrecht.

Hampton said that his firm does construction administration on the majority of their jobs.

"That is part of our responsibility. If we can identify a potential [moisture] problem, we will raise it with the contractor."

By the time the project has moved to the job site, it may seem like it is moving away from the architect's control. However, since moisture prevention methods start with design, it seems reasonable that educating homeowners about their responsibilities in humidity and moisture control should start here too.

Blimling commented that mold and mildew prevention is everyone's concern and that his firm makes every effort to do what it can to prevent moisture problems by consulting with all parties.

"We try to work in a team spirit-type mode," said Blimling. "We'll get together with the new owners [of the condominiums we build] and contractor to talk about prevention so the building is handed off in good condition. We urge the owners to take responsibility for environmental issues to prevent the conditions for mold and mildew."

PHOTO BY: GEORGE COTT/CHROMA INC.

Urban Studio Architects maintain they won't get involved in a project without a consultant on envelope issues.

Beyond the Drawing Board

Blimling pointed out an underlying problem that goes beyond the project. It is a legal one.

"We are facing [in general] a situation where litigation is encouraged as a solution to dealing with mold and mildew rather than trying to resolve the issue with the parties involved. I believe we can control mold/mildew in a reasonable way as long as we are constantly aware of this issue."

Many architects, given the track record of mold/mildew and moisture-related issues, are using the services of qualified waterproofing consultants.

"We're starting to hire consultants to work with us on the building envelope," said Brian Hammond, principal of Urban Studio Architects in Tampa, Fla. "Because this issue is so litigious, the use of consultants or specialists in this area has become a growing trend. We're just not going to get involved in a project without a building envelope consultant."

"We work closely with consultants on building envelope issues and we encourage new building owners [of condominiums] to do the same," added Caleb Janus, AIA, from the ADP Group located in Sarasota, Fla. "Moisture build-up, mold and mildew have become too much of a liability."

"As far as mold prevention, we follow industry standards and where there is a problem, we hire consultants," added Peter Ramsey, principal of Allison Ramsey Architects Inc. in Beaufort, S.C.

"We do a lot of work assisting architects," said Chris Decareau, an architect with Simpson Gumpertz & Heger, Inc. in San Francisco. "One of the things we are doing is asking architects and contractors to schedule, or more tightly manage, their moisture events to reduce intrusion. If there is a moisture issue—whether due to workmanship or an outside factor—we strongly recommend a plan to remediate it immediately so as to minimize any damage to the building envelope," he said.

While an ounce of prevention can take the bite out of remediation, architects are managing moisture in many ways, including good design, detailed specifications, effective mold-resistant products and close communications with contractors. m

Alan Goldberg is a contributing writer for **Moldmag**.

Top 5 Areas to Look Out for In Mold-Free Designs

Five areas in particular demand attention when it comes to stopping potential moisture intrusion. Recognizing potential problems areas is one thing, but specifying the materials that could prevent those problems is the best, proactive course of action.

1. **Roofing.** Use high-performance shingles, flashings, felt or ice and water shield and pay close attention to installation.
2. **Siding and masonry veneer.** Use the proper lap or flashings and install housewrap or asphalt felt.
3. **Windows and doors.** Use only correctly sized flashing that is properly installed.
4. **Basements and crawl spaces.** Use damp proofing or waterproofing on walls as required by code.
5. **Foundation.** Slope the finished grade away from the foundation.

For more suggestions, read *An Ounce of Prevention* on pages 10-11.

Special Section for Architects

Products to Keep in Mind for Moisture-Free Designs

Architects today are the first line of defense in preventing moisture intrusion. You can learn about new challenges in designing dry buildings at the American Institute of Architects (AIA) 2005 National Convention and Design Expo, May 19-21 at the Mandalay Bay Convention Center in Las Vegas *(see AIA Architects Imagine, Create and Transform, page 28)*, while you can learn about the products you may need to assist you in this issue of **Moldmag**.

FLOORING

Supra Floors Offers Its Subflor Supreme

Subflor Supreme® from Toronto-based Supra Floors Inc. is designed specially for use over concrete. The flooring combines an attractive finished wood surface with a channeled plastic underside to create a barrier to cold and moisture arising form the concrete in basements and slab-on-grade homes. The channels allow moisture, including any small leaks, to flow freely to floor drains. The tightly interlocking fit of the plans ensures an effective seal against cold and damp.

The flooring's sound-deadening and ergonomic properties also make it suitable for flooring over concrete in lofts, apartments, offices and condominiums. It features click-and-lock fastening and is now available in bleached white and warm red-brown.

www.subflor.com or call 866/782-3567.

Protecto Wrap Introduces WhisperMat

Protecto Wrap Co., a Denver-based manufacturer of flooring membranes, has introduced its WhisperMat line of high-performance flooring underlayments for effective sound control and moisture resistance.

The peel and stick non-permeable sheet membrane is constructed of a cross-linked polyolefin foam sheet combined with a rubberized adhesive. Suitable for multi-story construction, WhisperMat eliminates noise transmissions through hard flooring surfaces.

The WhisperMat HW Plus system also contains Pro-Bloc™ Sealer-Primer, a solvent-free, polymer-based moisture emissions reducer and primer, designed for protection from subfloor moisture and vapor emissions.

The product line is available for ceramic and natural stone tile, as well as engineered hardwood, parquet and laminate flooring.

www.protectowrap.com or call 800/759-9727.

PANELS

Nichiha Introduces Three New Fiber-Cement Products

Nichiha, a manufacturer of fiber-cement products, based in Norcross, Ga., has introduced three new panel styles. Each of the panel styles is installed using the company's clip installation system. The panels are ship lapped on four sides, so no sealant or caulk is necessary. The clip system creates a pocket of air between the panels and the substrate, reducing the potential for moisture build-up.

Cinderstone™ is a split-faced block created for multifamily and commercial development. Available in canyon brown and field gray, the panels measure 18 inches by 6 feet with a ⅞-inch thickness. The company's fiber cement stucco panels feature the look of stucco without the maintenance. The product will be available in several prefinished colors, measuring 18 inches by 10 feet with a ⅝-inch thickness. The new smooth flat panel resembles sandstone and measures 18 inches by 6 feet and ¾ inches thick. The product is currently in development for the multifamily and light commercial market.

www.nichiha.com or call 1-866-424-4421.

FOUNDATION PROTECTION

Horizon System Unveiled for Above-Grade Protection

The Horizon foundation finishing systems from Tremco Barrier Solutions of Reynoldsburg, Ohio, provide both moisture and thermal protection to the exposed foundation between the grade line and sill plate. The finishing systems include the Horizon Insulated System, a two-part insulation and coating combination, and the Horizon Coating System, a coating-only system to protect the exposed foundation wall.

The Insulated System starts with the TUFF-N-DRI® basement waterproofing system membrane, which is extended up the exposed foundation wall from the top of the below-grade waterproofing system to the sill plate. ThermoPanel™, a high-density insulation panel, is added above-grade and mechanically fastened onto the exposed wall. The mesh-reinforced system is completed with the application of Horizon Coat, a durable topcoat that repels water and is available in matte and coarse finishes.

The Horizon Coating System is suitable for markets where an exterior above-grade foundation moisture barrier is needed, but insulation is not critical. The coating system forms a full-wall moisture barrier outside and a dry living environment inside.

www.GuaranteedDryBasements.com or call 800/DRY-BSMT.

ROOFING

SECUROCK Offered to Protect Commercial Roofs

Chicago-based USG Corp. has unveiled its SECUROCK™ brand roof board, a new roof cover board option for low-slope commercial roofing applications. The product features fiber-reinforced technology and an integral water-resistant core designed for resistance to moisture and mold.

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The roof board is installed over the roof's insulation and under the membrane to supply protection, separation and support for the membrane. Its uniform composition enhances the strength of the membrane system by providing a strong, consistent bond, according to a company news release.

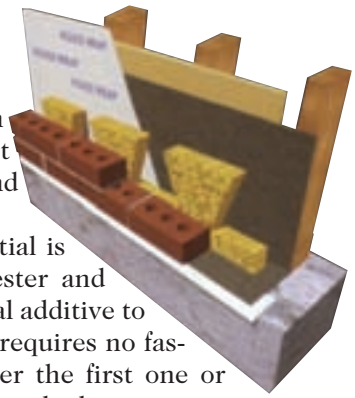
In independent lab tests, the product scored a 10, the highest possible rating for mold resistance on the ASTM test D3273. It also offers resistance to wind uplift and fire protection.

www.usg.com/securock or call 800/874-4968.

MORTAR PRODUCTS

MortarNet™ Keeps Brick Veneer Walls Dry

With its patented dovetail design and open-mesh weave, Mortar Net™ Residential from Mortar Net™ USA Ltd. of Gary, Ind., keeps brick veneer walls dry and free from trapped moisture and reduce the conditions necessary for mold growth. It breaks up mortar droppings on two levels, thereby allowing for open-air movement in and out of the cavity, and for moisture to migrate to the weep holes freely. The durable, lightweight product catches and suspends mortar droppings and other debris above the weep holes, preventing the mortar from forming a barrier against necessary water flow and air circulation.



Mortar Net™ Residential is made of recycled polyester and includes an antimicrobial additive to control mold growth. It requires no fasteners or adhesives; after the first one or two courses of bricks are laid, a continuous row of the product is placed in the cavity on the flashing against the back of the brick at the base of the wall.

The company also offers BlockNet™, a flashing and mesh material for concrete masonry unit construction. When properly installed, it will form a continuous drainage system along the entire perimeter of the building and direct moisture to the weep holes.

www.mortarnet.com or call 800/664-6638.

SEALANTS

Sika Sealants Receive AAMA Verification

Madison Heights, Mich.-based Sika Corp.'s industrial business unit has announced that its Sikaflex® -201 and Sikaflex® Textured Sealant have passed and received AAMA verification for 808.3-92, *Voluntary Specifications and Test Methods for Sealants: Exterior Perimeter Sealing Compound.*

The sealants will bond to numerous surfaces without the use of primers, and feature excellent wetting action in achieving a bond to multiple substrates under varying environmental conditions, according to company information. For sealing, waterproofing and bonding, Sikaflex® one-component adhesives and sealants can be used in a wide range of manufacturing and field applications. The Sikaflex®-201 all-purpose sealant can be applied to aluminum, steel, wood, roof, rails, door hinges and expansion joints, while the non-sag elastomeric textured sealant is used for weatherproofing of joints between brickwork, block work, masonry, wood and concrete or metal frames. The one-part polyurethane sealants are available in 10.3-ounce cartridges and 20-ounce unipacs.

www.sikaindustry.com or call 800/933-7452.

DUCTS AND DUCT LINERS

Seal-Tite Coating Inhibits Microbes

Duct, pipe and fittings from Seal-Tite, of Hillsboro, Ohio, are engineered for the most energy efficient distribution of conditioned air while maximizing air quality. The company's RX™ pipe features a blue AgION™ anti-microbial coating that it says controls the growth and migration of a broad range of microbes, including bacteria, mold, mildew, fungi and algae. The pipe's smooth interior and exterior is easy to clean and has a low porosity and coefficient of function that reduces the chance microbes have of attaching. The precoated steel is also designed for corrosion resistance.

The snap-lock pipe goes together quickly and ensures a leak-tight seam with its tightly closed corners, according to a company news release. In addition, Seal-Tite RX was designed to reduce turbulence and resistance of air flow.

www.sealtitehvac.com or call 800/582-9025.

VENTILATION

Broan Quiets Its Ventilation Products

Broan®, a part of Broan-NuTone LLC of Hartford, Wis., has introduced a new quiet collection of bath fans, the QT series of ventilation solutions.

The ventilation fans in the new series feature five styles and a variety of cubic feet per minute (CFM) levels to choose from. New housing, wheel and motor designs deliver optimum air flow. Many models are also available in builder packs to simplify the installation process and all of the fans and fan/light combinations

are made to slip into a common housing size. The new design features full-length installation tabs and engineered "I"-joist spacers for a solid mount in all types of construction, without the use of extension bars.

➡ **www.broan.com or call 800/558-1711.**

Roof Saver Designed to Ventilate Attics

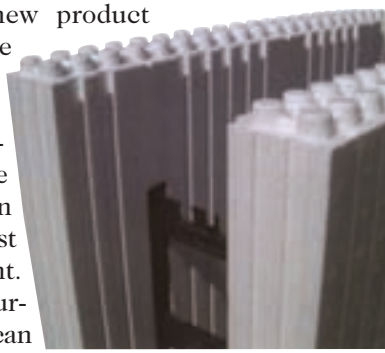
Blocksom & Co. of Michigan City, Ind., is offering its rolled ridge vent system, Roof Saver, for ventilation at the ridge of roofs. According to a company news release, Roof Saver reduces conditions that allow mold and mildew to flourish in attics by offering 15.2 square inches of net free area per linear foot. The system, made with natural fiber materials, is a continuous shingle-over ridge vent that installs along the ridge, providing an aesthetic finish for homes.

Roof Saver meets or exceeds the attic ventilation requirements of all nationally recognized building codes and has a UL class A fire rating. It has passed 100-mph independent wind driven rain and snow tests and won't deteriorate or corrode from wind, snow, rain or ice.

➡ **www.roofsaver.com or call 800/745-1408.**

INSULATED CONCRETE FORMS

LOGIX™ Designs Corner Strap to Strengthen ICF



LOGIX™ Insulated Concrete Forms (ICF) has announced the launch of a new product enhancement that will make installing the ICF quick and easy, according to a company news release. The LOGIX corner reinforcing strap is a molded-in-place metal strap designed to strengthen corner form units to better resist the pressure of concrete placement. The straps double as a fastening surface for finish materials, which can be screwed directly to the strap at any point on its length.

According to company information, ICF walls eliminate the need for an additional vapor barrier. For below-grade applications, LOGIX provides a waterproofing system that ensures a completely dry basement.

➡ **www.logixicf.com or call 888/41LOGIX.**

SILLS AND FLASHING

Jamsill Guard™ Announces Improvement to Sill Line

Jamsill Inc. of Ashland, Ore., has announced an improvement to its Guard™ line. New patent-pending sloped weep areas will further help direct water outside where it belongs. This improvement is located

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DUCTS AND DUCT LINERS

Owens Corning Reformats Its QuietR™ Duct Liner

Owens Corning of Toledo, Ohio, has introduced its newly formatted QuietR acoustic duct liner. The product offers enhanced acoustical performance and meets all national and state building code thermal requirements while providing high resistance to abuse.

The liner's durable air stream surface includes an EPA-registered biocide that protects the duct system surface from microbial growth and meets the requirements of ASTM C 1338 and ASTM G 21 (fungi tests), as well as ASTM G 22 (bacteria test). The product also inhibits the penetration of dirt, dust and other pollutants found in HVAC systems. In addition, through a modified blend of glass fibers, the new liner features improved acoustical performance and flexibility. With increased acoustical efficiency, QuietR absorbs fan and air turbulence noise and also reduces noise normally associated with the expansion, contraction and vibration of metal duct systems.

➡ **www.owenscorning.com or call 800/GET-PINK.**

directly underneath the jamb-to-sill joint of the door unit, the area most vulnerable to leaks, according to company information.

The improvements include the sill pan's three-piece design, which allows the installer a range of adjustability to ensure a tight fit in the rough opening. Seamless injection molded right and left corners completely contain the door/window sill. In addition, because of the location of the bonding areas, the recessed glue tabs are kept away from the door's jamb-to-sill joint, further reducing the potential for leaks.

➡ **www.jamsill.com or call 800/526-7455.**

INSULATION

Dryvit Announces New 30-Year Warranty

Dryvit Systems Inc., a manufacturer of exterior insulation and finish systems (EIFS) based in West Warwick, R.I., has announced a new 30-year warranty program for two residential systems, Residential MD® and Sprint MD®. The warranty, which states that the system will effectively drain any moisture that should enter the wall cavity, applies to the construction of one- and two-family homes, and builders and EIFS installers must meet specific quality-related criteria.

The Residential MD® system incorporates a drainage plane between the secondary weather-resistive barrier and the insulation board that allows for incidental water to weep to the exterior. In addition to energy efficiency, the system offers exterior details such as entranceways, window borders, arches, columns, sculptured looks and more.

Sprint MD® was designed for insulation and aesthetics, and it offers an extra level of moisture protection. The system's insulation board is fastened mechanically with Dryvit's approved fasteners over a code-approved weather barrier over plywood or OSB substrate. A drainage plane between the secondary weather barrier and the insulation board creates channels for the quick exit of incidental moisture.

➡ **www.dryvit.com or call 800/556-7752.**

AirTight's Spray Foam Eliminates Envelope Gaps

In order to prevent moisture infiltration through air leakage resulting from open cell insulation materials, AirTight Insulation Inc. of Rutledge, Ga., has introduced its AirTight spray foam insulation. According to a company news release, the spray foam

VAPOR RETARDERS

CertainTeed Brings Smart Vapor Retarder to U.S.

Valley Forge, Pa.-based CertainTeed Corp.'s insulation group has introduced to the U.S. a vapor retarder that breathes and allows excess moisture to escape from wall cavities. Called MemBrain™, this patented smart vapor retarder is a polyamide film that changes permeability from less than 1 perm at low humidity, such as during winter, to greater than 20 perms at high relative humidity.

The nylon-based MemBrain is used in place of traditional polyethylene vapor retarders with unfaced fiberglass insulation to provide an insulation system suitable for areas with season changes in temperature and humidity. With a high resistance to water vapor diffusion in winter, MemBrain reacts to relative humidity increases by altering pore size, allowing water vapor to pass through it. The lowered resistance supports the drying process.

A two-mil sheet of the material has equivalent strength of a 6-mil sheet of polyethylene. According to company information, MemBrain is also impermeable to organic pollutants and gases.

➡ **www.certainteed.com or call 800/233-8990.**

creates a monolithic seal around studs, windows and door framing, eliminating any gaps in the thermal envelope and minimizing dew point problems and condensation.

The spray-applied polyurethane foam insulation adheres to most materials and will not shrink or settle. It features an R-value of 7 and meets class one building requirements. According to the release, the foam also adds structural integrity to the house, reduces exterior noise, creates a barrier against moisture, gas and odor and retards insect and rodent penetration.

www.airtightinsulation.com or call 800/995-9466.

Johns Manville Introduces MR Faced Fiberglass Insulation

Johns Manville, of Denver, Colo., is now offering formaldehyde-free MR™ faced batts. The MR faced batts are treated with an EPA-registered preservative, the same product used in food to prevent mold growth. In place of formaldehyde, the company uses an acrylic binder that eliminates binder-related emissions of formaldehyde during manufacturing.

The fiberglass insulation and the kraft facing together pass the standard industry fungi-resistance test, while the kraft facing alone passes the more stringent fungi test for paper and paperboard. Under normal conditions, the permeability of the product is one perm or less, in accordance with building codes. In the high humidity conditions, the permeability doubles to allow moisture to escape, as recommended by building scientists.

The company has also introduced Spider™ spray-in formaldehyde-free, fast-dry insulation system. Spider is made from glass fibers that are naturally white like cotton. During the installation process, the fibers are mixed with a non-hazardous adhesive that eliminates the need for netting and speeds up drying schedules. According to company information, Spider dries more than six times faster than cellulose, mitigating the risk of mold and mildew growth and allowing more rapid sequencing for builders to complete projects expeditiously.

www.jm.com or call 800/654-3103.

Valéron's WeatherTrek™ Promotes Dry Homes

Houston-based Valéron Strength Films is offering its WeatherTrek™ housewrap with Valéron® engineered vented drain (EVD) technology.

The housewrap features a crush-resistant pattern with a standoff property that creates an open airspace to reduce solar driven inward vapor drive. The stand-off property between the sheathing and siding allows moisture to drain (rather than pond) along the siding edge. The housewrap's three-dimensional engineered surface allows for non-directional installation of drainage and moisture, which also increases the energy efficiency of the home that it surrounds.

WeatherTrek is available in industry standard 60-inch widths for 1,000 square feet of coverage. It is tear-, snag- and puncture-resistant, and lightweight and translucent, making it easy to handle for quick installs. The product is available from Tyco Plastics & Adhesives and Ludlow Coated Products.

www.valeron.com or call 800/825-3766.

Keeping Their Noses to the Grindstone

Working Dogs Make a Living Finding Mold

By Megan Headley

Eager to share a demonstration of how he works, Barney, a mold detective, stands up and leads the way into the new home's 9-by-12 kitchen. Walking a slow circle around the perimeter of the room, his head down and his dark eyes focused, he breathes in deliberately, thoughtfully. He passes by low oak cabinets and kitchen appliances. As his feet move closer to a tiny bottle tucked beside the pantry door, Barney freezes.

Barney knows there is mold present in this room. He doesn't need to fix it or explain how it got there; his only job is to point out the exact spot where the destructive spores have begun to grow. He does just that by settling down on the floor beside the first of several carefully placed training containers, some of which contain samples of mold, and looking up at his partner, who rewards the detective with a handful of Kibble. Barney—a young chocolate Labrador mix—eagerly gobbles the treat and waits for his handler's instructions to continue the search.

David Marcelli, owner of Mold Trackers LLC in Westminster, Md., acknowledged that there have been times in the past two years when he and his certified mold dog, Barney, would show up for work to be greeted with skepticism.

"I put it in perspective," said Marcelli, a former firefighter. "If I come in and say, 'This is my bomb dog Barney,' nobody thinks that's funny."

Once Barney is at work and alerting his handler to the presence of undiscovered mold, there's not much left to laugh about. Marcelli related one particular incident in

which he did an inspection of a new home for a home buyer, with the buying and selling agents watching.

"They said, 'we're bringing a dog? Let's see this.' Barney got into a closet and nailed this wall with a bump out from a pipe. I took my moisture meter out and checked it—it was completely saturated. There was a leaking pipe in the wall, and it was the main drain line in the house," Marcelli explained.

"The home inspector didn't find it. We sniffed it out. The home inspector would have missed it and this home buyer would have bought a house with a problem. I charged them an hour of my time and potentially saved them more than that in repairs. Then they have the choice of deciding whether they're going to buy the house or not," Marcelli said.

Whether skeptics like it or not, the use of mold dogs has turned into a growing part of the mold industry. Between increasing research on the topic, the founding of the International Mold Detection Dog Association (IMDDA) and growing publicity, mold dogs are doing much more than just bringing a friendly, furry face to the industry.

The Best Dogs for the Job

As much as readers may like the thought of training their house pet to detect mold, certain types of dogs are generally chosen for training. The 2001 report *How to Find Hidden Microbial Growth with a Mold Dog*,[1] states, "A dog that is trained to be a mold dog must have special qualities and abilities … Qualities that distinguish such a dog are a strong character and a prey instinct."

The 2003 report *Using Canines in Source Detection of Indoor Air Pollutants*[2] described in greater depth the ideal traits for detection dogs:

"Although no specific breed or conformation characteristics are required for a good detection dog, and many organizations, in fact, use dogs rescued from humane societies, many dogs must be screened to identify the right personality for detection dog work. A good detection dog should be healthy and energetic with a high play drive, capable of traveling and working in a variety of surroundings without being distracted and exhibit a balance of independence and biddability."

Bill Whitstine, the Certified Master Trainer who developed the practice of using dogs to track mold in the United States, looks for just this when choosing dogs to train at Safety Harbor, Fla.-based Mold-Dog, a subsidiary of his Florida Canine Academy. Many of the dogs he trains are rescued from the local Humane Society and they range in age from 10 months to three years.

"You're looking for a dog that's eager to learn, because they do have to learn," added Marcelli. "That's why a lot of the hunting dogs and herding dogs are used; they have a work ethic, they want to go to work."

Since Marcelli and Barney work primarily in new

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Getting Started With a Mold Dog

Q. *How do I get a mold dog?*

For more information on how to get a mold dog certified by Mold Dog, visit www.mold-dog.com or call 800/665-3364.

Q. *What is included in the set-up costs?*

According to the EPA report *Using Canines in Source Detection of Indoor Air Pollutants*, costs are divided into two categories: the initial investment and the ongoing maintenance costs. It cites the cost of a detection dog as between $5,000 and $10,000, although mold dog handlers have put the cost closer to $15,000.

Just as when getting a pet, ongoing cost considerations include feeding, housing, vaccinations and parasite control. In addition, training equipment and mold samples must be purchased so that the dog can train daily.

Q. *What do mold dog inspectors generally charge?*

David Marcelli, owner of Mold Trackers LLC, says that he charges $275 to walk through the door and $75 an hour after that. The average inspections take one to two hours, according to Marcelli, who estimates his average service bill in the $300 to $400 range. In addition, clients will be faced with the costs of testing samples at and receiving a report from a certified laboratory.

"You can have several hundred dollars tied up into it," said Marcelli. "For some people, that's not an issue—for some people, that is."

construction, Marcelli pointed out that the dogs must also be able to concentrate in what is ordinarily a distracting environment.

Industry Movers

Marcelli became involved in the mold dog industry nearly two years ago. A mold remediator at the time, he learned about the program through the Indoor Air Quality Association (IAQA). After talking with Whitstine and deciding this was a viable option for him, Marcelli bought Barney and brought him home to Maryland in July 2003. According to Marcelli, his investment was paid for and had made a profit in about 60 days.

Marcelli agreed that his background as a former remediator does help him in his current job, but he added that mold dog handlers come from varied backgrounds.

"My personal opinion is that you better have some sort of a background in this before you go out and buy a dog," Marcelli said.

Part of the reason for this, he explained, is that as a handler he is often called in to examine buildings that have already been cleaned for mold. He said that it helps him to be able to recognize what work was done, and more importantly, what may have been missed so that he can help identify why problems are still occurring.

Such was the case for Jason Earle, founder of Lab Results LLC in Princeton, N.J. "I got involved in this as a remediator," he recalled.

Earle explained that people frequently called the remediation company he worked for to request estimates. Although remediators would be sent out to look, they couldn't offer an estimate without performing testing and finding the extent of the problem, an expensive process many homeowners were reluctant to undergo simply for an estimate.

Because of this, Earle began to research and invest in a variety of different inspection tools, including Oreo, a certified Labrador mold dog. When other remediation companies began calling him and asking him to check out problems they were finding, he decided to begin his own company.

"I had experience in air filtration," related Bob Carter, Certified Indoor Environmentalist (CIE), Certified Environmental Inspector (CEI) and owner of Elite Detection Dawgs in Atlanta. In 2003 Carter bought Brandy, a chocolate Labrador retriever, to deal with the problem of mold from another angle.

Carter added, "I don't deal with the remediation at all because I feel like it's a conflict of interest."

The other handlers agreed that they too are now interested only in finding the source of the problem.

"My course of action is to tell [clients] to seek out a qualified mold remediator," Marcelli said.

Sniffing for Their Supper

The use of mold dogs actually began in Sweden nearly 20 years ago. The program moved to the United States nearly seven years ago when Whitstine was asked by insurance companies to look into training dogs to identify mold. As a result, Whitstine founded Mold Dog.

"Bill has a proven track record with arson dogs, bomb dogs, dope dogs," Marcelli said.

According to the report from Lorenz and Diederich, dogs are able to detect mold because microorganisms emit gaseous substances called microbial volatile organic compounds (MVOC). The MVOCs are emitted from contaminated material even after the microorganism has died. After approximately 1,000 hours of training, dogs are able to identify up to 20 varieties of mold.

"A dog's sniffing behavior is different from inhalation breathing," wrote Bird in her report. This is also the reason experts say mold does not have the health effects on dogs that it seems to have on people.

"After they've sniffed and sampled an odor, dogs characteristically purge odors from their olfactory organs," Bird wrote.

"What's the first thing a dog does when he goes out-

Bringing Mold Dogs Together

Being able to discuss problems is one reason Bob Carter of Elite Detection Dawgs feels the International Mold Detection Dog Association (IMDDA) will benefit its members. The organization is holding its first conference May 20-21 in Clearwater, Fla., providing an opportunity for mold dog handlers to compare problems and solutions, laboratories and marketing techniques. Most importantly, it will offer an opportunity for sharing training techniques.

Carter related that last year he and his dog Brandy visited the Marcellis. The handlers and their dogs visited a new construction site that Marcelli and Barney were working on. They ran Barney through the building and he alerted in several spots. Next, they ran Brandy through and Carter was pleased to see that she alerted on the exact same spots. According to Carter, that experience brought up another point of the association.

"We want to make sure I'm giving the same type of inspection down here in Atlanta you're doing up there in Maryland or Virginia … That's one of the goals of the IMDDA."

For more information, visit www.imdda.com or contact Jason Earle at jason@stopmold.com.

side?" Marcelli further explained. "Shoves his nose right into the ground and sniffs everything. They're exposing themselves to that. They have a whole different system than we do."

He added, "You have to figure too, I'm on the end of the leash. Whatever the dog's exposed to, I'm exposed to. I'm not putting myself in harm's way for anybody."

Training doesn't end when the dog leaves Whitstine's program, however. It is an ongoing process. For example, Barney eats only when he is working, whether on a construction site or at home in an environment that has been set up for training, because he identifies food with work. Marcelli uses small bottles of mold that he orders from a laboratory as training aids. Setting them up at home, he leads Barney and waits for the dog to alert him to the presence of mold by sitting down. Barney is then rewarded with food. Other trainers use tools such as a training wheel, which holds small samples of mold in one of its five arms.

In addition, dogs are required to recertify with Mold Dog every 90 days, while handlers are required to certify annually. As a handler, Marcelli was required to go through a week of training to learn to work with his dog.

"But we have to handle the dog right to have him pass his quarterly certification," Marcelli pointed out.

Having alerted to mold in this training demonstration, Barney waits patiently while Marcelli searches for his reward.

Advantages of the Nose

But just how good is that nose? As far as accuracy, the EPA report on general detection canines states, "For many applications, a 90 percent accuracy of finds is used as a standard. Typically accuracy is somewhat lower under field condition than under test conditions."

In Barney's case, Marcelli agrees to a point.

"He's dead on. Everything that he ever has hit on that we've tested has been positive and I've never had him really do a false alert," Marcelli said. "They can't be 100 percent but he's very, very close to it. He has a great nose."

But it isn't accuracy that members of the mold dog industry cite as one of the biggest benefits of using the dogs. That reason is the dog's ability to pinpoint the area where the mold growth is occurring.

"The whole nature of this is finding out where [the mold] is," Marcelli said.

Carter added that techniques such as air sampling can tell an inspector that there are high levels of mold present, but they can't show the inspector where the mold is.

"Most of us are able to do other testing, that your basic, normal inspector does, but the advantage of the dogs is that we can pinpoint where the mold is," he said. "The dogs are simply an additional tool."

For Earle, the dogs are one of a combination of tools, each of which offers specific advantages over the other. Lab Results uses a combination of infrared thermal imaging and mold dogs in its search for mold and moisture problems in commercial and residential buildings.

As with the dogs, infrared thermal imaging is a non-invasive method for detecting moisture in walls and roofs. While a mold-detection canine can quickly find mold inside a building, infrared thermal imaging is particularly useful for searching the exterior.

Thermography can't be used to find mold, but it can locate the source of the water buildup, explained Earle. Whether it's dormant or active, dogs can find mold growth, but, Earle added, "They can't find where the water's coming from."

Familiar Problems

When working with animals or working with mold, problems are certain to arise, and combing the two doesn't necessarily make things easier.

Getting insurance is one such issue. Marcelli explained that it's often difficult to find insurance to cover the business that he's in. He was able to solve that problem thanks to his father-in-law, the owner of an insurance company, who provided him with professional liability insurance.

"We were able to get insurance nobody else in this industry has," Marcelli said.

In addition

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to insurance worries, there are the maintenance costs.

Bird noted in her report, "Unlike laboratory equipment, costs of feeding, housing, vaccinations and parasite control are incurred whether or not the dog is working."

As far as dealing with animals, dogs may have their moments when they are easier to deal with than human employees, but they can't explain when they have an 'off' day.

"I've had days … where he's not up to it, for whatever reason," Marcelli said. "In the two years I've had him, that has been very, very rare—one or two days a year. If I had employees who were only gone one or two days a year, I'm doing really well," Marcelli said.

Marcelli related that he did remember one job where he was forced to apologize and go home because Barney would not cooperate.

"Cats were our major issue," Marcelli explained. "Now cats are not an issue."

On this particular job, two unusual hairless cats made the job impossible. According to Marcelli, there was no moving Barney past the unfamiliar scent. So how did Marcelli fix this problem?

"I picked a stray kitten up out of the middle of the road in October—they're best buddies now," he said.

Kathy Dunkle and her certified mold dog Bronco search some of the most obvious hiding spots for mold.

Growth of the Workplace

A combination of word-of-mouth and good marketing has propelled awareness of these unusual inspection teams. A flurry of articles in local newspapers have focused on the novelty of this new business, and HGTV recently took a look at mold dogs in action as part of its *American Homes 2005* special, which aired in March.

For Marcelli, business seems to be doing well. He is looking at getting another dog this year. Most of his work comes through word of mouth.

"I have one contractor [in particular] that keeps me running," Marcelli said. "And he says, 'I don't know why other people don't do this.'"

According to Marcelli, that's because many contractors choose to be reactive instead of proactive. The up-front expense shouldn't seem so bad, according to Marcelli, when considering the expense after a mold problem develops.

"When you're talking a half a million dollars and up on the sale of a house, my $300 probably doesn't equate to a day's worth of work from an electrician—but I'm going to keep you from getting sued," Marcelli said.

Earle said that he is actually preparing to franchise his business. As he pointed out, the business doesn't exactly lend itself to paying somebody to go out for an hour and work with the company's $15,000 dog.

Carter, who works mainly on real estate inspecting new homes, said that by working with mold dogs other inspectors could increase their business. Much the way Earle does, Carter feels the mold dogs could be used to supplement other testing methods.

"Some people feel a little threatened by the dog," Carter said. "They're really not a threat to the industry."

Mold dog or not, pre-sale inspections for mold are becoming increasingly more common.

"Eventually I believe you're going to see mortgage industries require mold inspections if it hasn't already started," Marcelli said. "I actually did an inspection for a bank and they showed me on their good faith message where there was going to be a mold inspection."

As the need for mold inspections continues to grow, it's likely that an increasing piece of it will be covered by noses such as these. m

[1]Wolfgang Lorenz and Thomas Diederich of the Institute of Indoor Diagnostics in Düsseldorf, Germany

[2]Sandra Bird, environmental engineer with the Environmental Protection Agency (EPA)

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

RESEARCH

New Study Says Mold in Homes Doubles Risk of Asthma

Exposure to mold and dampness in homes as much as doubles the risk of asthma development in children, according to a study published in the March issue of the peer-reviewed journal *Environmental Health Perspectives* (EHP). Researchers studied 1,984 Finnish children aged one to seven years over a six-year period to see if they developed asthma. Data collection included a baseline survey administered in March 1991, as well as a follow-up survey in March 1997, asking questions about the child's health, parents' health, parents' highest education level and details of the child's environment including exposure to environmental tobacco smoke and presence of feathery or furry pets.

The study focused particularly on four indicators of moisture or mold in the home, including mold odor, visible mold, visible moisture and a history of water damage. The presence of mold odor proved to be the only significant indicator of asthma development.

A total of 138 children, or 7.2 percent of the study population, developed asthma during the study period. Having a parent with a history of allergies increased susceptibility in children. Mold odor increased the risk, the study found, independent of parents' medical histories. In fact, children living in homes with mold odor during the initial study period were more than twice as likely to develop asthma in the following six years.

"These findings strengthen evidence that exposure to molds increases the risk of developing asthma in childhood," said lead author Jouni Jaakkola, director of the University of Birmingham's Institute

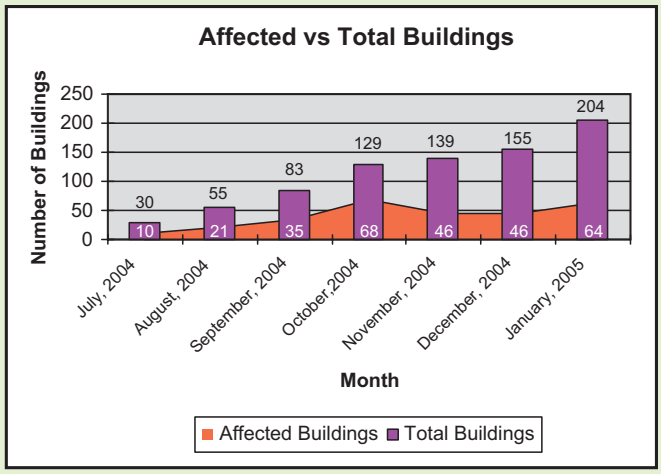
EMSL Analytical Monitors Florida Mold Problems

EMSL Analytical Inc., a network of indoor air quality testing laboratories based in Westmont, N.J., has issued the results of a survey taken on the presence of stachybotrys mold in Central Florida.

Last year Florida was faced with the worst hurricane season in a century, with four of the six major hurricanes directly affecting Central Florida. While leaks, humidity and wind drafts were some of the problems area residents had to endure, a major concern plaguing the affected dwellings was mold proliferation.

According to the report's author, Dr. Blanca Cortes, microbiology laboratory director and general manager for EMSL, one can gauge the degree of water damage in a building by the composition of the mold spores found inside the affected building. Air trap samples from 591 buildings were examined from July 2004 to January 2005. During that period of time, stachybotrys and/or memnoniella (a type of stachybotrys) affected 226 buildings out of the 591 examined. The worst occurrences were observed during October, where stachybotrys affected 52.71 percent of the buildings examined. A gradual decrease was observed in the number of affected buildings during November (33 percent), December (29 percent) and January (31 percent). However, while the number of affected buildings was decreasing, mold amplification was on the rise.

Water intrusion in roofless houses, water damage due to prolonged floods and the characteristic heat and humidity of Florida were believed to be factors enhancing mold amplification. With the onset of winter, and



lower heat and humidity, freezing temperatures in central Florida forced residents to use heating devices to keep warm—once again increasing heat and humidity. This was believed to be the cause of the increase in the number of affected buildings in January 2005 over December 2004. To compound the problem, many houses still have only a blue tarp for roofing, and these tarps have begun to deteriorate. Rainfall associated with frontal systems continues to pound unprotected homes.

EMSL added that it will continue to monitor Central Florida's mold problem as the next hurricane season approaches.

www.emsl.com or call 800/220-3675.

for Occupational and Environmental Medicine. "They also show the importance of heredity—children of parents with asthma have a two-fold risk of asthma compared with children of nonasthmatic parents."

Children who were exposed to moisture or mold in the home were also slightly more likely to be exposed to environmental tobacco smoke, to have feathery or furry pets and to have parents with a lower education level. The study adds to the body of evidence linking asthma with exposure to cigarette smoke.

"This study is important for families everywhere," said Dr. Jim Burkhart, science editor for EHP. "Anyone with young children in the home should be aware of the potentially harmful effects of long-term exposure to mold and this potential link to asthma in children."

The article is available free of charge at http://ehp.niehs.nih.gov/members/2004/7242/7242.html.

www.ehponline.org.

Study Takes Some Blame Off Mold

A new study in the January issue of *Annals of Allergy, Asthma & Immunology*, titled *Characterization of a population presenting with suspected mold-related health effects*, suggests that a number of health problems blamed on toxic mold syndrome may actually be based on other environmental conditions.

The study was led by allergist Jonathan A. Bernstein, MD, an associate professor at the University of Cincinnati and director of the allergy clinic at the Cincinnati Veteran's Administration Medical Center, according to an article from *WebMD Medical News*. It looked at 135 patients suffering from probable mold-related side effects. After closer examination—including gathering histories of exposure to mold, home and workplace analysis, blood and skin tests for mold sensitivity and two years of medical follow-up—the researchers found no link between mold exposure, symptoms and mold sensitivity.

According to the article, the researchers have now analyzed more than twice that number of people with possible mold-related health effects and say the study's results apply to this population as well.

While many of the people tested had lived in moldy houses or worked in mold-filled buildings, once they were removed from the buildings their allergies and ill health improved. None tested positive for exposure to stachybotrys, the black mold commonly blamed for "toxic mold syndrome," and only one patient had long-lasting health effects.

The article noted that Bernstein's team had also evaluated children in a mold-contaminated school. The researchers did find high levels of mold, but they found even higher levels of dust mites and cockroaches. One sick child turned out to be suffering not from mold sensitivity, but from a cockroach allergy. m

Safer Drinking Water Found to Cause Leaking Pipes

New state-mandated copper piping in California may be making residents' water safer, but it is putting homes at risk of potential water damage caused by leaks, according to the California Professional Association of Specialty Contractors (CalPASC).

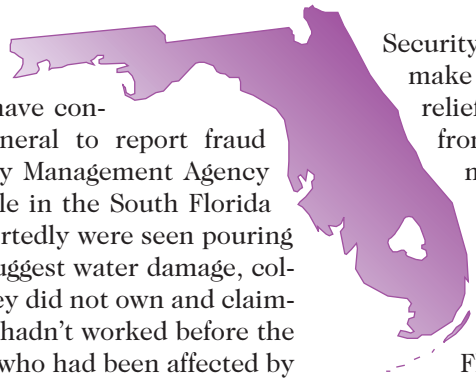
Research presented at CalPASC's Drinking Water Symposium looked at the issue of copper pipe failure caused by the use of chloramines in California's water systems. Following federal guidelines from the Environment Protection Agency (EPA), the Metropolitan Water District, which supplies over 60 percent of the drinking water to cities in California, has switched to the use of chloramines to keep drinking water bacteria-free. However, this treatment also may cause pinhole leaks in the copper tubing carrying the water. This same tubing is what California law stipulates plumbers must use as industrial and residential water pipe. To date, more than 5,000 pin-hole leaks have been reported in copper after switching to chloramines.

CalPASC estimated that the costs associated with property damage, lower property value and increased insurance premiums from leaky copper pipes would be avoided by changing materials.

"California is the only state in the U.S. that promotes copper piping by restricting the use of plastic piping alternatives," said Tom Price, a former plumbing contractor now with CDR Concrete. "With the safer water treatments, we're seeing not only more leaks nationwide, but potentially dangerous health effects."

According to a CalPASC news release, studies have shown increased levels of lead in the drinking water as well as detectable copper levels in some tested California water. The association has urged the state to switch to nonmetallic piping. While plastic piping, such as CPVC and PEX, is approved in the Uniform Plumbing Code, the state currently imposes restrictions on its use.

Floridians Report Fraud Related to Hurricane Aid



Since last summer's hurricanes hit Florida, more than 110 people have contacted the state attorney general to report fraud against the Federal Emergency Management Agency (FEMA), according to an article in the South Florida *Sun-Sentinel*. Individuals reportedly were seen pouring water on their belongings to suggest water damage, collecting checks for furniture they did not own and claiming damage to appliances that hadn't worked before the storms. In some cases, people who had been affected by the hurricane were not able to collect payment because of records of claims that had been made fraudulently. Fourteen Miami-Dade County, Fla., residents have been charged thus far with fraud in claiming damages.

According to the *Sun-Sentinel* article, little had been done by FEMA about the reports until the newspaper began to investigate. As greater attention was called to cases of fraudulent claims, U.S. Senators Susan Collins and Joseph Lieberman announced that the Senate Homeland Security and Governmental Affairs committee would investigate allegations of fraud and waste in the distribution of disaster aid by FEMA.

Members of Congress expressed concern that disaster aid has been granted in localities that may not have qualified for assistance.

"Federal disaster relief is very important to help families and communities rebuild from a disaster; however, it must be limited to those who have truly suffered losses. It is troubling that scarce disaster assistance may have gone to areas that did not warrant assistance," said Senators Collins and Lieberman in a joint statement. "Our committee will investigate these allegations in concurrence and working with the investigation currently underway by the Department of Homeland Security Inspector General's Office. We need to make sure that the integrity of FEMA's disaster relief program—and taxpayers—are protected from fraudulent claims, inefficient government processing and wasteful spending."

According to the article, fraud and overpayments generally account for three percent of the money FEMA awards local governments and individuals in a disaster. So far, it is at about one percent in Florida, where the agency has handed out more than $2 billion.

Many Homeowners Unsure if Mold Damage Covered on Policy

The majority of U.S. homeowners—64 percent—are not sure if mold damage is covered on their homeowner's insurance policy, according to a survey commissioned by Environmental Assurance Group (EAG), a consultant for real estate lenders, developers and others on environmental risk issues, based in West Hartford, Conn. Harris Interactive® conducted the online survey of 1,362 homeowners in November 2004.

"With mold problems growing in homes across the country, homeowners without insurance coverage for mold could be exposed to major financial losses," said Charles Perry, a principal of EAG. "People unsure about mold coverage on their home should check their policy or call their carrier immediately. For the 13 percent who think they are covered—read the fine print. Forty-three states now exclude coverage completely, and in the remaining states the deductibles are so high or the restrictions to filing a claim are so extreme that it's coverage in name only."

In addition, Perry suggested looking into mold-resistant building products such as inorganic non-woven housewrap, fiberglass insulation, raised floor systems and paperless drywall. Some of these materials have just recently been developed as inorganic alternatives to traditional building products.

"Since so few homeowners are insured for mold damage, awareness of mold-resistant practices and products is essential," said Perry. "Tell—don't ask—your contractor to abide by these practices. If the contractor does not

Reading the Fine Print

In a nationwide survey of 1,362 U.S. homeowners, the majority of homeowners reported that they simply didn't know whether or not they were covered for mold damage, or if mold-resistant practices products were used to construct or remodel their most recent home.

Mold Damage Coverage on Homeowner Insurance Policy

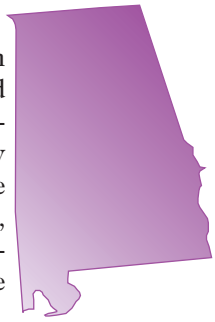
Not sure if mold damage is covered	64 percent
Not covered for mold damage	20 percent
Covered for mold damage	13 percent

Mold-Resistant Practices and Products Used on Home

Not sure if mold-resistant practices and products were used	52 percent
Mold-resistant practices and products were not used	34 percent
Mold-resistant practices and products were used	14 percent

know about mold-resistant practices and products, tell them to get educated on the subject or you will a find new contractor."

Alabama Caps Mold Damage Claims



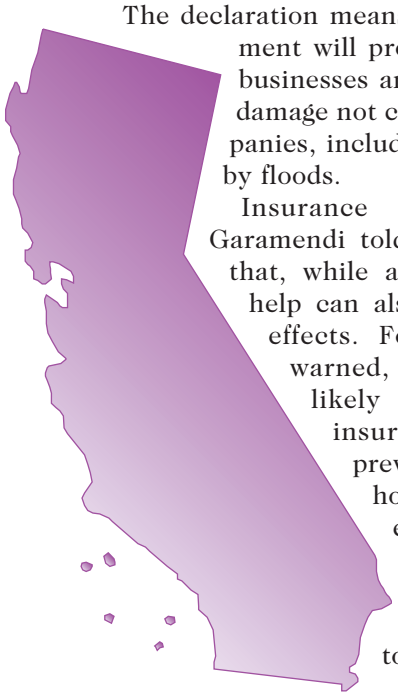
The Alabama Insurance Commission has agreed to a $10,000 cap on mold damage claims on homeowner's insurance policies, according to a February article in the *Insurance Journal*. The Alabama Insurance Service Office Inc., a rating organization representing several hundred insurers, requested the cap on mold damage claims.

An article in the *Alabama Business Review* noted that other companies, including State Farm, are seeking state permission to change the language on mold coverage.

The Alabama Cooperative Extension has indicated that the cap is the result of an increase in mold illness symptoms associated with flooding in the southern part of the state. Portions of Alabama have been declared disaster areas by the president on 35 occasions from 1969 to 1997. Twice the entire state was declared a disaster area.

Federal Aid Covers Water Damage From California's Mudslides

On February 4, 2005, Bush issued a federal disaster declaration for California to help pay for water and mud damages caused by January's record storms.



The declaration means that the federal government will provide grants and loans to businesses and residents that suffered damage not covered by insurance companies, including water damage caused by floods.

Insurance commissioner John Garamendi told the *Los Angeles Times* that, while a good thing, the federal help can also bring with it negative effects. For instance, Garamendi warned, some homeowners will likely forgo purchasing better insurance or doing damage-prevention work around their homes as a result of the federal aid. Others will be encouraged to remain in mudslide zones and flood plains, rather than move to safer ground. m

NEW HIRES

Mold Building Forensics Expert Joins Liberty Building

Liberty Building Diagnostics Group (LBDG), an Orlando, Fla.-based company providing moisture and mold building forensics and expert witness services, has welcomed **J. David Odom** as a principal and senior building forensics consultant. According to a company news release, Odom also specializes in evaluating HVAC and building envelope systems performance, designing remedial repairs to correct moisture and mold problems, litigation support and expert witness services.

Prior to joining LBDG, Odom led CH2M Hill's building forensic and expert witness practice for most of his 26 years with the firm. During the past 20 years, Odom has also assisted contractors and building owners in analyzing the source of their moisture and mold problems and in recovering the cost of remedial repairs. He has completed projects throughout the Caribbean, South Pacific, France, the Philippines and Hong Kong.

Odom has also co-authored, along with George DuBose, LBDG's vice president of consulting services, *Preventing Moisture & Mold Problems in Hot, Humid Climates: Design and Construction Guidelines.*

"We are very pleased that David will be lending his considerable expertise and experience to LBDG," said DuBose. "By virtue of his international reputation, our clients know that with him on their side, they will have the most experienced team in the United States for solving and preventing moisture-related mold problems."

Steedman-Lyde, CIH, Joins LA Testing

Jaime Steedman-Lyde

LA Testing, a full-service microbiological, indoor air quality, asbestos and lead testing laboratory based in South Pasadena, Calif., has announced the addition of **Jaime Steedman-Lyde**, CIH, to its staff. Steedman-Lyde will be the lab director for LA Testing.

Steedman-Lyde's responsibilities will include hiring, training, supervising and directing laboratory activities for a 20 person analytical laboratory staff. She will advise clients on sampling protocols for monitoring of toxic substances in air, water and bulk materials, and also supervise the implementation of new capabilities in the laboratory to reflect state-of-the-art methodologies as promulgated by EPA, NIOSH and OSHA.

She brings to the company 13 years of industrial hygiene laboratory experience. She worked as an analyst for NATLSCO for seven years and, prior to joining LA Testing, Steedman-Lyde was the laboratory director for a fully accredited AIHA laboratory. In addition, she is the government affairs director for the Southern California Local Section of AIHA, as well as the treasurer for the California Industrial Hygiene Council.

APPOINTMENTS

IICRC Board Names 2005 Executive Committee

The Institute of Inspection, Cleaning and Restoration Certification (IICRC), a non-profit certifying body for the flooring inspection, floor covering and specialized fabric cleaning and disaster restoration industries, elected its 2005 executive committee during its board of directors' meeting in November 2004.

The executive committee for the upcoming year includes: **Carey Vermeulen**, chairperson; **Paul Pearce**, international vice president; **Darrell Paulson**, first vice president; **Ruth Travis**, second vice president; **Mike Reed**, secretary; **Ed Hobbs**, treasurer; and **Joe Dobbins**, certification council chair.

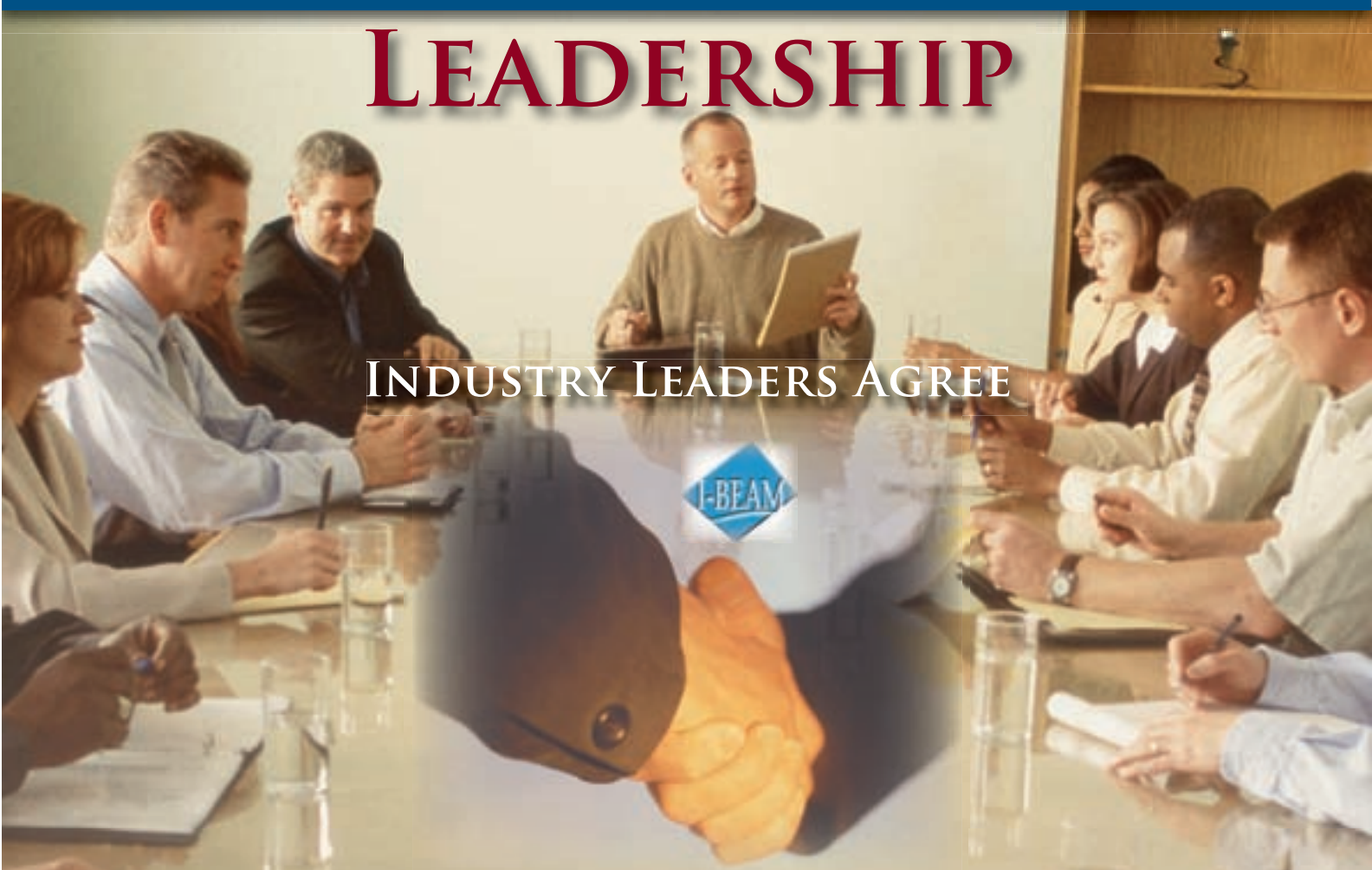
Vermeulen is entering his second term as chairperson and is a 21-year veteran of the cleaning and restoration industry, according to an IICRC news release. He is the former chairperson of the upholstery cleaning technical advisory committee and the S300 upholstery cleaning standard, and is an IICRC Master Textile Cleaner and Master Fire and Smoke Restorer.

New to the board is Ed Hobbs, an industry veteran with more than 20 years' experience. In addition to serving as the IICRC representative for the Mid-South Professional Cleaners Association (MSPCA) since 1999, Hobbs is the longest serving member of the MSPCA's board of directors, where he held board-level positions from 1990 to 2001.

www.IICRC.org.

If you would like to share information about new employees, recent appointments or outstanding coworkers, or if you or someone you know is interested in being profiled in a future issue, please email mheadley@moldmag.com.

LEADERSHIP



INDUSTRY LEADERS AGREE

Leaders in the insurance, laboratory testing, education and products industry support the EPAs efforts in promoting a comprehensive approach to indoor air quality and mold management.

By utilizing the Environmental Education Foundations "IAQ & Mold Management" program, that includes the use of the EPA I-BEAM software as a basis for managing indoor environmental quality risks, insurance policies are being written that include mold exposure for commercial and residential real estate owners, developers, and managers, municipalities, hospitals, general and specialty trade contractors, lead, asbestos and remediation contractors, manufacturers, and other commercial businesses.

RUTHERFOORD
The Assurance Company

At Rutherfoord, we know that our first responsibility isn't to sell you insurance. It's to help reduce your potential for loss. That's part of the holistic approach we take at Rutherfoord. And it's one of the reasons why we've been awarded our clients' loyalty since 1916.
www.rutherfoord.com

ems

Environmental Monitoring Systems, Inc., is a world-wide provider of Asbestos, Lead and Indoor Air Quality products, supplies and equipment. EMS employs the latest technologies and highest quality materials to deliver some of the best products available in the industry today.www.emssales.net

EMSL
EMSL ANALYTICAL, INC.

As the nation's leading and largest environmental testing firm, EMSL's network of 23 laboratories has been providing quality analytical services since 1981. We offer a wide array of analytical testing services to support environmental investigations focused on asbestos, microbiology, lead paint, environmental chemistry, indoor air quality, and industrial hygiene applications
www.emsl.com

Environmental
Education
Foundation

Environmental Education Foundation (EEF), the countries largest, oldest and most respected indoor air quality association. EEF offers the industries best professional designations in IAQ and mold management recognized by the leading insurance companies, government agencies and private organizations.
www.enviro-ed.org

Florida Seeks to Require Regulation of Remediators

Legislation to require mold professionals working in Florida to be trained, licensed and certified was filed by Rep. Carl J. Domino, R-West Palm Beach, on December 16, 2004. Florida House Bill 117, co-sponsored by Rep. Franklin Sands, D-Weston, is waiting for consideration during the 2005 Florida legislative session, which began March 1 and lasts for two months.

The education and examination requirements of HB 117 have been in part adopted from national industry organizations such as the American Indoor Air Quality Association. The bill will allow private entities to offer the certification and training it requires.

According to Matthew Dempsey, lobbyist for the remediation industry, the importance of the bill has been highlighted by the repairs still being made to homes in Florida that were damaged by the 2004 hurricanes.

"What the hurricane has done, and specifically the coverage on the hurricane, has highlighted the need [for such a bill]," said Dempsey. "Dealing with mold is dealing with the storm after the storm."

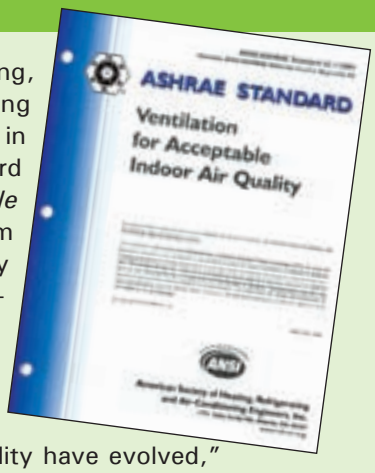
The bill, Dempsey said, will call for training programs that have been approved by the state's Department of Business and Professional Regulation. The department will work to establish a baseline of criterion for training reflective of industry standards and progress. The remediation industry will also play a role in the regulation by providing input on the development of standards and training. In addition, Dempsey noted that funding for the bill will be from the industry and not by taxpayers.

Dempsey added, "The Florida Construction Industry Licensing Board last year voted unanimously to enlarge the role of their board to include a remediation professional."

This individual will deal with regulatory issues and individual complaints, and will also participate in the regulation sessions of related areas, such as dealing with HVAC contractors, plumbers, roofers and electricians.

Dempsey expects that a decision on the bill will be reached in April.

ASHRAE Updates Ventilation Standards



The American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc. (ASHRAE), based in Atlanta, has published the updated standard 62. 1-2004, *Ventilation for Acceptable Indoor Air Quality*, which specifies minimum ventilation rates and indoor air quality requirements for commercial and institutional buildings.

"While the purpose of the standard has remained consistent since it was first published in 1973, the means of achieving the goal of providing acceptable indoor air quality have evolved," said David Butler, chair of the standard 62.1 committee. "The 2004 standard provides users with better tools to help get the job done."

Among the major changes to the standard, which incorporates 17 addenda, is the revision of the ventilation rate procedure to reflect information regarding ventilation impacts on indoor air quality (IAQ) and to clarify the adjustments necessary for space air distribution and system efficiency of multi-zone recirculating systems. The breathing zone ventilation rate now includes an area-related component and an occupant-density-related component, which are added together to determine the required ventilation for the space.

The IAQ procedure was modified by converting the material in the standard into requirements that are stated in mandatory and enforceable language, according to an ASHRAE news release.

Also included in the standard is a new informative appendix, Appendix G, *Application and Compliance*, which provides guidance on when the standard applies to new and existing buildings. It also contains a code - intended language version that could be adopted by jurisdictions that have not adopted a building code.

In addition, ASHRAE has updated standard 62.2-2004, *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*. The standard looks primarily at whole-house ventilation, local exhaust and source control. Members of the mold industry are particularly affected by a provision that recommends a mechanical exhaust system be installed in every full bathroom. The minimum requirement is for a bathroom fan that exhausts 50 cfm, while a 100-cfm unit should be standard in kitchens.

The cost of ANSI/ASHRAE Standard 62.1-2004 is $60 or $48 for ASHRAE members. Standard 62.2-2004 is $37 or $29 for members.

To order, or for more information, visit www.ashrae.org or call 800/527-4723.

Moisture in the Media

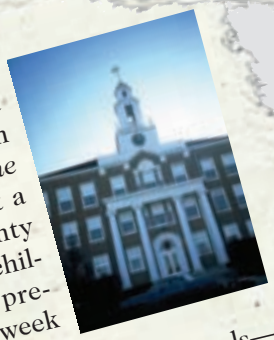
Coming out of the long winter, we leave behind freezing pipes, torrential rains and water damage from melting ice. No wonder spring and summer seem like a beckoning promise of long days spent outside and pleasant weather—even when we know that's unlikely to be the case. Below are a few reminders that each season brings its own problems with mold, as detailed in various consumer press stories during the last few months.

Mold on Vacation

Boston Globe "Handyman on Call" Peter Hotton warned one homeowner away from ventless heaters in his February 24, 2005, column. The homeowner, who had been using an infrared gas heater at a vacation home, said that the unit did an excellent job heating the home, but left behind an unbelievable amount of moisture. After three months away, the homeowner returned to the vacation spot and found mold had formed on the lower walls and window sills.

Hotton heartily gave his opinion of the heaters, which he said were dangerous and illegal in many states. According to Hotton, the units produce 2 cubic feet of water vapor for 1-cubic-foot of gas burned, all of which in this case condensed on the vacation home's walls, causing mold.

Mold May Not be to Blame



In an interesting twist, a March 9, 2005, article in Florida's *Fort Pierce Tribune* cautioned area residents that a spike in St. Lucie County schools' absentee rates and children's over-the-counter prescription sales during a six-week stretch might actually be due to the flu, rather than mold. With Florida schools—and St. Lucie County in particular—still suffering from post-hurricane poor health, mold is much on the minds of school board officials.

In March the county health department provided data from three studies originally designed to track outbreaks of illness and bio-terrorism events, cautioning school officials that the information was not designed with hurricane after-effects in mind. Health department epidemiologist Edgardo Morales said a late-season flu outbreak is unusual, but community-wide results showed similar spikes in illness.

According to the article, symptoms of mold exposure mimic the flu and might include nasal stuffiness, eye irritation, fever or wheezing.

Add Moisture, Not Mold

In his January 10, 2005, column for the *Philadelphia Inquirer*, Mitchell Hecht looked at one tactic for staying healthy during the winter. According to Hecht, more colds, flu and pneumonia happen during the winter months when the air is dry. In addition to the usual defenses of getting enough sleep, eating healthy and washing hands, Hecht suggested using a humidifier to add moisture to dry homes. A stuffy nose in the morning, he explained, is an indicator that the nasal tissue, the first line of defense against many viruses, has dried out. Cracks and defects in the respiratory track let in viruses and bacteria.

However, adding moisture must be done carefully. To prevent mold from growing in a moister environment, Hecht said that he prefers a steam-vapor humidifier, which typically uses a heater coil to incinerate mold and bacteria. Other options are quiet ultrasonic units, which may not put enough moisture into the air, or cool-mist humidifiers that can run the risk of growing mold and mildew in the water tank. Regular cleaning and antibacterial mold drops could solve that problem. m

The Hysteria Settles

Mold growth can have a big impact on property values and human health, but in the hysteria there have been some rip-offs from both the inspection and remediation sides. Here are but a few that I have seen:

I inspected a home where the owner was living in a trailer in her driveway because the Florida lab that analyzed the sample mistakenly identified her candle soot as toxic mold. They advised her to evacuate the house.

Another homeowner was in a hotel room because her heating technician noticed some "white mold" on the foundation walls. He sent over a friend of his who was a remediator to examine two walls. The contractor ordered the family out of the house and charged them $3,000 to clean concrete dust (efflorescence) from the foundation walls.

A lawyer was told to demolish his bathroom by a consultant who took three samples, because the concentration of basidiomycetes (mushroom-type spores) was slightly higher in the bathroom air than outdoors. The bathroom was completely tiled and there were no leaks, loose tiles or missing grout, and certainly no mushrooms.

A contractor was being sued because of flooding he supposedly had caused when the owners were away on vacation, escaping a renovation. There was aspergillus mold all over the basement wherever the kids had spilled food because the dehumidifier had shut down in the family's absence, allowing the relative humidity to climb over 75 percent.

And it goes on and on …

Jeffrey May
Founder and principal,
May Indoor Air Investigations LLC
Cambridge, MA

Ideas? Opinions? Feedback? Send them to Reader Rant at mheadley@moldmag.com.

Calendar 2005

April 13-14, 2005

An Executive View of Mold & Mold for the Construction Industry Short Courses

Global Learning and Conference Center.
Atlanta.
Sponsored by the Georgia Institute of Technology, Professional Education.
Contact: Georgia Institute of Technology at 404/385-3500 or visit www.pe.gatech.edu.

April 20-23, 2005

49th Annual CSI Show & Convention

McCormick Place.
Chicago.
Sponsored by the Construction Specifications Institute.
Contact: CSI at 800/689-2900 or csi@csinet.org.

May 12-13, 2005

DRC's 2005 Conference & Trade Show

Hilton Niagara.
Niagara Falls, Ontario.
Sponsored by Disaster Restoration Contractors.
Contact: DRC at 905/564-8218.

May 16-21, 2005

Affordable Comfort Conference 2005

Marriott Downtown Indianapolis.
Indianapolis, Ind.
Sponsored by Affordable Comfort Inc.
Contact: Affordable Comfort at 724/627-5200 or visit www.affordablecomfort.org.

May 19-21, 2005

AIA National Convention and Design Exposition

Mandalay Bay Convention Center.
Las Vegas.
Sponsored by the American Institute of Architects.
Contact: AIA at 202/626-7300.

May 20-21, 2005

IMDDA Conference

Clearwater, Fla.
Sponsored by the International Mold Detection Dog Association.
Contact: Jason Earle at jason@stopmold.com or 800/630-9047.

May 21-26, 2005

AIHce 2005

Anaheim Convention Center.
Anaheim, Calif.
Co-sponsored by the American Industrial Hygiene Association and the American Conference of Governmental Industrial Hygienists.
Contact: AIHA at 703/849-8888.

May 31-June 3, 2005

PCBC 2005

Moscone Center.
San Francisco.
Sponsored by the California Building Industry Association.
Contact: PCBC at 800/956-7469.

June 20-23, 2005

Ecobuild America 2005

Disney's Coronado Springs Resort & Convention Center.
Orlando, Fla.
Sponsored by the Sustainable Buildings Industry Council.
Contact: 800/996-3863 or e-mail info@ecobuildamerica.com.

June 21-24, 2005

A&WMA 98th Annual Conference and Exhibition Conference

Minneapolis Convention Center.
Minneapolis.
Sponsored by the Air and Waste Management Association.
Contact: A&WMA at 412/232-3444.

July 14-16, 2005

Southeast Builders Conference (SEBC) 2005

Orange County Convention Center.
Orlando, Fla.
Sponsored by the Florida Home Builders Association.
Contact: SEBC at 800/261-9447.

September 14-16, 2005

21st Century Building Expo and Conference

Charlotte Convention Center.
Charlotte, N.C.
Presented by the North Carolina Homebuilders Association.
Contact: NCHBA at 919/676-9090.

September 14-15, 2005

An Executive View of Mold & Mold for the Construction Industry Short Courses

Global Learning and Conference Center.
Atlanta.
Sponsored by the Georgia Institute of Technology, Professional Education.
Contact: Georgia Institute of Technology at 404/385-3500 or visit www.pe.gatech.edu.

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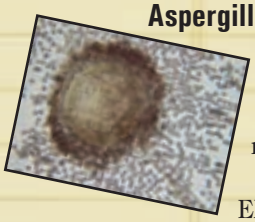
The ABCs of Mold

5 Fungi to Know and Love

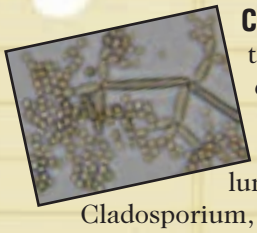
Molds are just one branch of the fungi kingdom, but this branch has countless genera and species growing across the world. Some genera are more common than others to a particular environment—and some are more common than others to the news and reports that we see developing around mold. Those more recognizable names are as good a place as any to begin to familiarize yourself with the types and characteristics of mold.

Alternaria: is a genus of mold that includes about 50 species. Commonly found in outdoor air, it lives on plants, soil, wood and wood pulp, as well as textiles and food. According to the American Industrial Hygiene Association (AIHA), the presence of Alternaria spores generally peaks in July or August, which sensitized individuals may notice since this species can lead to reactions and fungal allergies. This particular genus is considered an occasional contaminant of water damaged building materials, particularly those that contain cellulose.

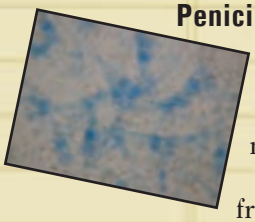


Aspergillus: is a genus that includes nearly 200 species of mold, although AIHA states that only 40 occur with any frequency. According to EMSL Analytical Inc., an AIHA-certified microbiology lab based in Westmont, N.J., Aspergillus is one of the most common genera found in the world. Although its outdoor frequency is considered low, these species grow on an array of organic materials and are some of the first fungi to appear on water-damaged materials.

While Aspergillus fungi have been linked to allergic reactions and hypersensitivity pneumonitis, EMSL reports that this particular mold also has practical applications in food production. Aspergillus oryzae is used to ferment soybeans to soy sauce, while Aspergillus niger is used in the bread and beer making industries and also to decompose plastic.

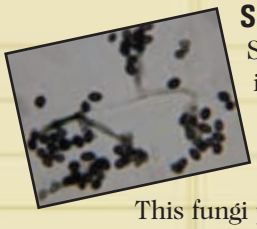


Cladosporium: according to the National Association of Mutual Insurance Companies (NAMIC), is the genus most likely to be found in both outdoor and indoor air. It is frequently found in water damaged environments and all types of its species are found on plants, wood, wood pulp, textiles and food. Since this fungi can grow at 0° Celsius it is also associated with refrigerated foods. Moreover, according to NAMIC, some species may be resistant to certain types of treated lumber. According to AIHA, approximately 10 percent of the population is sensitized to Cladosporium, which produces a wide variety of allergens.



Penicillium: some species of which are known to produce mycotoxins and incite allergic reactions and hypersensitivity pneumonitis, may be best known for its role in producing penicillin. This widespread genera grows in water-damaged buildings on wallpaper, wallpaper glue, decaying fabrics, moist chipboards and behind paint. An indicator organism for water damage, this mold may also be familiar as the blue rot on apples, cheeses and other foods.

According to AIHA, there are 225 accepted species of Penicillium, though only 70 occur with any frequency. Many Penicillium species cause damage in damp building materials including the toxigenic species Penicillium aurantiogriseum.



Stachybotrys: consists of approximately 10 species and occurs primarily on dead plant material. Stachybotrys chartarum is the most common species, and although it typically is found on straw, it grows well on building materials containing cellulose that have been extremely wet for a week or longer. Stachybotrys is considered slow growing as compared to Penicillium and other common mold genera, but when water is available for prolonged periods it may gradually become the predominating mold, especially on cellulose containing materials.

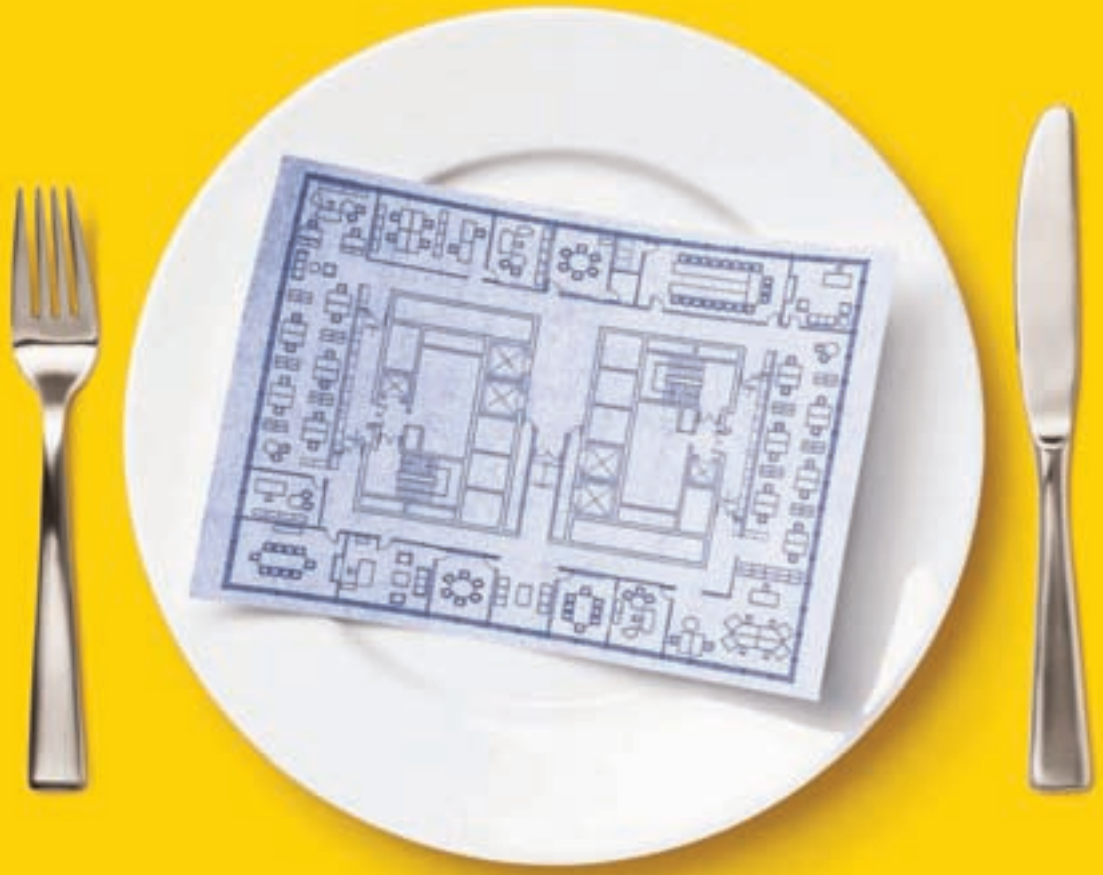
This fungi produces mycotoxins that can irritate skin and mucous membrane, according to NAMIC. Experts are beginning to study this genus more closely.

➡ **www.aiha.org/governmentaffairs-pr/html/mold-glossary.htm.** m

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

1. Most walls inside buildings are made of paper-faced drywall.

2. Mold eats paper.



3. If you eliminate the paper you reduce the chances for mold.

4. Georgia-Pacific introduces DensArmor Plus™ paperless drywall.

For office buildings, our revolutionary paperless drywall provides moisture and mold resistance. For free literature on DensArmor Plus, call 1-800-BUILD GP. For technical information, call 1-800-225-6119 or go to www.densarmorplus.com.

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